

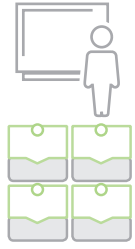


**UNIVERSITY
DEVELOPMENT
PLAN** **2018
2022**

TU Dortmund University
University Development Plan 2018 – 2022

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1. Introduction

With this University Development Plan, TU Dortmund University presents its strategic development concept for research and knowledge transfer, the promotion of young scientists, studies and teaching as well as the university's objectives for the years 2018 to 2022. With this plan, the members of TU Dortmund University focus their attention on the successes and strengths

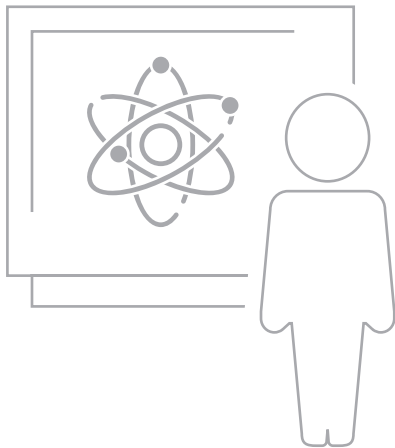
they have jointly achieved, which today characterize the distinctive profile of TU Dortmund University both nationally and internationally. At the same time, the plan looks ahead: it shows how TU Dortmund University seeks to shape its future, how it supports high-performance areas and develops new perspectives.

2. Profile of TU Dortmund University

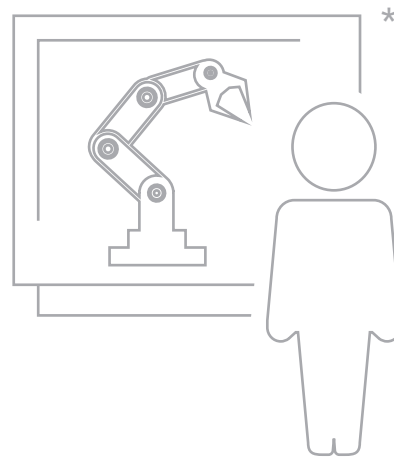
Anniversary

tu | 50 Jahre

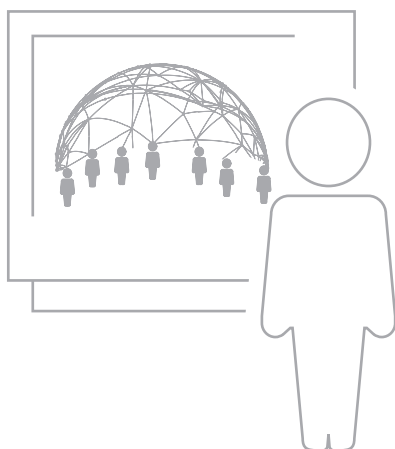
Special Profile



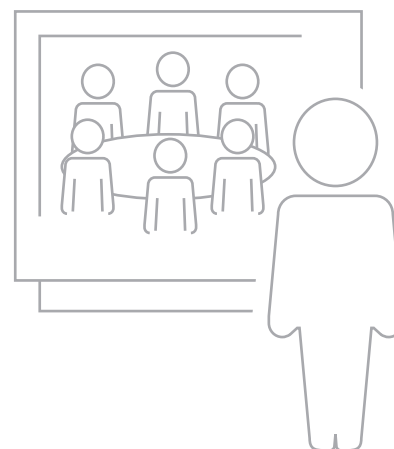
Science



Engineering



Social Sciences



Cultural Studies

Since its founding 49 years ago, TU Dortmund University has developed a special profile encompassing 16 faculties ranging from science and engineering to social sciences and cultural studies. The university has about 34,200 students and 6,200 employees, including 300 professors.

TU Dortmund University has a strong focus on research. The university's disciplines, e.g. mechanical engineering with its emphasis on production and logistics, physics, biochemical and chemical engineering, statistics and computer science, as well as education research, are well known for their outstanding research achievements both nationally and internationally.

Students at TU Dortmund University can choose from classical subjects and innovative courses of study such as medical physics or degree programs in spatial planning, statistics and journalism. A particular focus is put on teacher training. As one of only few universities in Germany, TU Dortmund University offers professional teaching qualifications for all types of schools.

TU Dortmund University attaches great importance to social and sustainable development – values to which it is strongly committed. As one of the largest employers in Dortmund, the university promotes the development and health of its members and supports good working conditions and equal opportunities.

TU Dortmund University is driving the transformation of the city and the Ruhr area forward into a high-tech and service location and cultural metropolis. In the immediate vicinity of the campus,

the TechnologieZentrumDortmund promotes the economic application of ideas from science. The lively exchange with neighbors in the region, but also with partners in Europe and around the world, is a special enrichment for students, scientists and all employees.

Of particular importance for the development of the region is the University Alliance Ruhr (UA Ruhr), in which TU Dortmund University, the University of Duisburg-Essen and Ruhr University Bochum joined forces ten years ago. 120,000 students and 1,200 professors – even these few statistics indicate the new size created by the alliance. Since the founding of the UA Ruhr, the Ruhr area has developed into one of the strongest science regions in Germany.

3. Research

Profile areas

A

Materials, Production und Logistics

TRR188, TRR 160, TRR 73

B

Chemical Biology and Biotechnology

RESOLV, ZIW, TRR 63, INVITE

C

Modeling, Simulation and Optimization of Complex Processes and Systems

SFB 823, SFB 876

D

Youth, School and Education Research

IGLU/PIRLS, NEPS, DoProfil

Third-party funding

1.000

Third-party-funded research projects

EUR 66 million

Third-party expenditures

9

DFG-funded CRC and/or. TR

TU Dortmund University is one of the leading technical universities in Germany. With around 1,000 third-party-funded research projects and more than 66 million euros in third-party expenditures in 2016, the university is a beacon in Germany's research landscape.

The research strength of TU Dortmund University is particularly evident in nine Collaborate Research Centers (CRC) and Transregios (TR) funded by the German Research Foundation (DFG). In four of these centers, the university is responsible for the coordination. It also participates in a cluster of excellence in the Ruhr area with the Ruhr University Bochum as coordinator. In addition, members of the university work in ten DFG research groups, two of them coordinated by TU Dortmund University, and in two coordinated DFG priority programs. Two Emmy Noether young investigator groups, three DFG graduate schools, two of them coordinated by TU Dortmund University, and eleven additional third-party-funded graduate schools are located at TU Dortmund University. Eight scientists of TU Dortmund University are currently receiving ERC grants.

In the DFG funding atlas, TU Dortmund University ranks top in eight subject areas nationwide. The QS World University Ranking "Top 50 Under 50" compares universities that are younger than 50 years. In a national comparison, TU Dortmund University ranks 3rd among all young universities in Germany.

Research at TU Dortmund University is internationally oriented, and the researchers form a worldwide network. About 200 international

cooperation agreements and more than 600 publications with international co-authorship each year illustrate the density of worldwide collaboration networks. Together with the St Petersburg University, TU Dortmund University has established the first German-Russian Transregio "Coherent Manipulation of Interacting Spin Excitations in Tailored Semiconductors". Joint liaison offices of the UA Ruhr in New York, Moscow and São Paulo promote the intensification of international cooperation. The university will continue to advance the close cooperation with foreign research and educational institutions and thus sustainably strengthen the research of TU Dortmund University, in this way also contributing to peacebuilding. Together with its partners in the University Alliance Ruhr, TU Dortmund University is a member of the "scholars at risk" network, an international network of more than 400 universities, research institutions and other scientific organizations that work to help refugee or scholars at risk worldwide.

In order to consolidate particularly successful and promising research areas, TU Dortmund University will specifically establish new professorships in the coming years: in the faculty development plans, the Rectorate and the faculties have agreed to establish six additional W2/W3 positions to create lifetime professorships. In addition, the faculty development plans provide options for the creation of additional W2/W3 professorships, which will be established in the event of successful project proposals for larger research projects.

Through advance appointments to fill upcoming

vacancies, nine W2/W3 professorships can be temporarily doubly filled in order to strengthen successful fields of research or to specifically support highly demanded degree programs.

3.1 Profile areas

3.1.1 Profile areas of TU Dortmund University

TU Dortmund University has four interdisciplinary profile areas in which it conducts research at the highest international level. These profile areas are:

A Materials, Production Technology and Logistics

The broad profile area “Materials, Production Technology and Logistics” is dedicated to the entire life cycle ranging from basic material properties through products and production facilities to logistics. The Faculty of Mechanical Engineering and the Fraunhofer Institute for Material Flow and Logistics cooperate closely with the Faculties of Mathematics, Physics, Computer Science and Statistics in this profile area. The Transregions led by TU Dortmund University in this profile area include the TR 188 “Damage Controlled Forming Processes”, the TR 160 “Coherent Manipulation of Interacting Spin Excitations in Tailored Semiconductors” as well as the TR 73 “Manufacturing of Complex Functional Components with Variants by Using a New Sheet Metal Forming Process – Sheet-Bulk Metal Forming”. Furthermore, the Priority Program 1480 “Modeling, Simulation and Compensation of Thermal Effects for Complex Machining Processes” is coordinated by TU Dortmund University. Two further initiatives for

Collaborative Research Centers illustrate the quality of this profile area: the draft for a Collaborative Research Center “Mechanisms of Tribological Conditioning” is currently being evaluated; the topic “Vulcanized Fiber” also has great potential.

The outstanding position of materials and materials research is evident in the interuniversity UA Ruhr flagship program “Materials Chain” (see chapter 3.1.2). TU Dortmund University intends to maintain its leading position in production technology in Germany and intends to strengthen this profile area with the newly established professorship “Nontraditional Manufacturing Processes”.

In the field of logistics, TU Dortmund University coordinates the BMBF top cluster “EffizienzCluster LogistikRuhr” together with the two Dortmund Fraunhofer Institutes for Material Flow and Logistics as well as for Software and Systems Engineering. With 180 partner companies and 20 research institutes, it is currently the largest logistics research project in Europe. Beginning in 2017, the University – together with the Fraunhofer Institutes, its other partners in the cluster, the Leibniz Research Centre for Working Environment and Human Factors and Boehringer Ingelheim Pharma GmbH as an industrial partner – launched the “Fraunhofer High-Performance Center Logistics and IT, Dortmund”.

The center strengthens the interface of logistics and computer science in new and innovative logistics fields and dedicates itself to both basic research and applied research topics.

The university and its partners from industry and

science have made it their goal to develop the research and development center for logistics and IT into one of the world's leading centers. The "Digital Hub Logistics" will contribute to the expansion of technology transfer. As one of twelve digital hubs in Germany, it is supported at the Dortmund location by the federal government. In order to further expand its leading position in logistics research, TU Dortmund University is striving to acquire a collaborative research center (CRC) in the field of logistics over the next few years.

The strengths of mechanical engineering and logistics are combined by TU Dortmund University in an interdisciplinary focus on "Industry 4.0". Together with computer science, electrical engineering and sociology, answers and concepts for the progressive digitization of work and

production processes are being developed in order to help shape the digital transformation of the economy and society.

B Chemical Biology, Drug Research and Process Engineering

New developments of chemical, biotechnological or pharmaceutical products and processes depend significantly on an understanding of the molecular relationships and on the development of new process engineering tools. The research focus "Chemical Biology, Drug Research and Process Engineering" is dedicated to these questions in regard to the future. The focus of this research interest is set on the function and modification of proteins and nucleic acids and their interaction with small molecules. In the "Ruhr Explores Solvation" (RESOLV) excellence cluster, scientists from

the Faculties of Physics, Chemistry and Chemical Biology as well as Biotechnology and Chemical Engineering study the influence of solvents on the properties and reactivity of molecular systems. Together with Ruhr University Bochum, TU Dortmund University was invited to submit a full proposal for a "RESOLV" cluster in the strategy of excellence (see also 3.1.2).

In addition, TU Dortmund University cooperates closely with the Max Planck Institute of Molecular Physiology and the Leibniz Institute for Analytical Sciences – ISAS. The University is a coordinator of the research group FOR 1979 "Exploring the Dynamical Landscape of Biomolecular Systems by Pressure Perturbation". In recent years, TU Dortmund University has significantly expanded its successful research and intensive cooperation in medical chemistry and pharmacy through targeted new appointments and support for innovative research initiatives.

In 2014, the "Center for Integrated Drug Research" (ZIW) was founded, in which scientists from the Faculty of Chemistry and Chemical Biology and the Faculty of Biochemical and Chemical Engineering work together with non-university research institutions and partners from the pharmaceutical industry. This cooperation is being intensified steadily, for example through the research initiative "Medical Chemistry in Dortmund" acquired by the Faculty of Chemistry and Chemical Biology and the "Drug Discovery Hub Dortmund", acquired through the Research Infrastructures Program of the federal state of North Rhine-Westphalia (NRW) and launched in 2017. Its goal is to build a bridge between medical-chemical research and

the pharmaceutical industry.

Another focus is the chemical and biotechnological production of fine chemicals and active substances, including the separation and processing steps required for this purpose. In TR 63 “Integrated Chemical Processes in Liquid Multiphase Systems”, scientists from the Faculty of Biochemical and Chemical Engineering develop new methods for the efficient production of fine chemicals from renewable raw materials. Since 2011, projects at the interface between university research and industrial application have also been carried out at the INVITE research center, which is operated by TU Dortmund University together with Bayer GmbH in the field of new production technologies. In 2016, Heinrich Heine University Düsseldorf was added to INVITE as an additional partner in order to further strengthen the component of pharmaceutical process engineering. In the research infrastructure funding competition of the federal state of NRW, proposals were submitted for the “Drug Delivery Innovation Center at the INVITE Research Center (DDIC@INVITE)” and the “CLIB Competence Center for Biotechnology”.

TU Dortmund University will further strengthen the profile of “Chemical Biology, Drug Research and Process Engineering” with a newly created professorship in “Biomimetics”. It will focus on the design, synthesis and characterization of new molecular and nanoscale components. An inter-university UA Ruhr professorship “Laser Spectroscopy in Solvation Science”, which has been part of the Faculty of Physics since 2017, complements the solvent research with new laser spectroscopic methods.

To further strengthen the profile area, a grant application was submitted for a research building “Center for Bioscience at Extreme Conditions”, which is currently under review by the Ministry of Culture and Science.

C Data Analysis, Modeling and Simulation

The growing complexity of systems in natural sciences, engineering and economics requires the development of new models for describing complex phenomena by means of theoretical findings, but increasingly also by intensive computer simulations. This involves very large amounts of data that must be processed and analyzed. The profile area “Data Analysis, Modeling and Simulation”, which is run by one of the oldest and largest German Computer Science faculties and the Faculty of Statistics, the most important and most research-intensive center for statistics in Germany, is addressing this scientific challenge. With the two Collaborative Research Centers 823 “Statistical Modelling of Nonlinear Dynamic Processes” and 876 “Providing Information by Resource-Constrained Data Analysis”, TU Dortmund University impressively demonstrates its research strength. In the DFG Research Training Group 1855 “Discrete Optimization of Technical Systems under Uncertainty”, young researchers are working on optimizing technical systems, including the role of people in decision-making processes. A hallmark of the profile area is the interdisciplinary cooperation between the data-intensive research of physics, chemistry, chemical biology, process engineering, electrical engineering and mechanical engineering with computer science, mathematics and statistics, which deal with data models.

Data scientists work e.g. with the scientists of the Materials Chain of the UA Ruhr (see 3.1.2) in the optimization of production processes. The results of this research focus area are converted into successful applications in economics, personalized medicine, resource-conserving and energy-efficient production technology, sustainable transport and green logistics.

The university aims to maintain its top positions in the DFG funding atlas in computer science and data analysis. The outstanding strength of the profile area is reflected in numerous initiatives: a competence center for “Machine Learning”, for which a BMBF application is being submitted, shall further strengthen this profile area. Together with Ruhr University Bochum, TU Dortmund University is also applying for the establishment of a Max Planck Institute for “Cybersecurity and Privacy”. The outline for another CRC/TR proposal on the topic of “Cosmic Interacting Matters – From Source to Signal” has also been initiated with Ruhr University Bochum.

D Education, School and Inclusion

The profile area “Education, School and Inclusion” is shaped by the Faculty of Education, Psychology and Sociology, in particular by its Institute for School Development Research, the Faculty of Rehabilitation Sciences and strong didactic research in several faculties, above all in the Faculty of Mathematics. The Dortmund Competence Center for Teacher Training and Teaching / Learning Research (DoKoLL), the German Academy for Educational Leaders (DAPF) and the Center for Higher Education (zhb) also contribute significantly to the strength of this research area.

Major projects that have attracted attention throughout Germany, such as “IGLU/PIRLS 2016” and the participation in the “National Educational Panel Study (NEPS)” stand for the high research performance of the profile area. A future focus is to be placed on the topic of inclusion both in the area of school and education and in the world of work. The research project “AKTIF – Akademiker*innen mit Behinderung in die Teilhabe- und Inklusionsforschung (AKTIF – Academics with Disabilities in Participation and Inclusion Research)”, funded by the Federal Ministry of Labor and Social Affairs, has been successfully launched.

With regard to the school system and teacher education, the increasing diversity of learners and the demand for inclusion currently pose the greatest challenges. The project “DoProfiL – Dortmund Profile for Inclusion-Oriented Teacher Education” at TU Dortmund University is funded by the federal government and the states with funds from the Federal Ministry of Education and Research as part of the joint “Quality Offensive for Teacher Education”.

As part of the first funding phase until mid-2019, researchers from the fields of subject didactics, educational sciences (special) education, school subject disciplines and higher education didactics work together to promote development and basic research on inclusion-oriented diversity management and to make use of this research in teacher training at TU Dortmund University. Do-ProfiL focuses on a comprehensive understanding of inclusion, which includes gender, religion, ethnic origin, social or economic status, physical impairments or special learning needs, from

learning disabilities to giftedness.

The successful acquisition of third-party funds from the federal government, the federal state of NRW, the EU and foundations will be continued. The aim is to further strengthen the international networking and visibility of this nationally outstanding area. A special role shall be played by the Marie Skłodowska-Curie European Training Network “Outcomes and Causal Inference in International Comparative Assessments (OCCAM)” within Horizon 2020.

In order to strengthen the profile area, the professorships “Sport Science with a Focus on Performance and Health” and “Linguistics in English Studies / American Studies” will be set up and two chairs in Educational Science will be double staffed for several years.

3.1.2 Joint flagship programs and competence fields of the UA Ruhr

Research in the University Alliance Ruhr is developing very dynamically. By pooling their strengths, the UA Ruhr Universities have opened up innovative fields of research. Outstanding examples include the UA Ruhr flagship programs “Ruhr Explores Solvation” (RESOLV) and “Materials Chain” that were established in 2015, in which researchers from the three partner universities cooperate nationally and internationally with non-university research institutions and commercial enterprises. In 2017, the new competence field “Metropolitan Research” was established.

A Flagship Program RESOLV

The excellence cluster and the UA Ruhr flagship

program “RESOLV”, which is funded by the federal government’s Excellence Initiative, brings together international and regional partners, thus enabling top-level international research. RESOLV investigates chemical reactions, industrial processes and biological processes in solvents. The participating scientists consider solvent molecules as functional units that play an active role in solvent-mediated and controlled reactions. More than 50 scientific working groups distributed over seven institutions in the Ruhr metropolitan region with approximately 200 researchers have joined together to develop a comprehensive understanding of solvation. The proposal submitted jointly by TU Dortmund University and Ruhr University Bochum for a cluster within the framework of the excellence strategy (RESOLV) has reached the second round of the selection procedure and demonstrates the future-oriented cooperation between the two universities, which is to be further intensified.

The establishment of the UA Ruhr professorship “Laser Spectroscopy in Solvation Science” will further strengthen the focus of research at TU Dortmund University (see Chapter 3.1.1 B Chemical Biology, Drug Research and Process Engineering).

B Flagship Program Materials Chain

The flagship program “Materials Chain”, which was established in 2015, bundles and strengthens the research activities in the field of materials science at the three universities of the UA Ruhr. The aim is to reach a complete and concise description of the whole materials chain – from atoms to finished technical components and vice versa.

This internationally recognized flagship program of the UA Ruhr combines activities of more than 200 research groups. The “Materials Chain” covers all stages of modern materials sciences, from designing, manufacturing and refining of materials to their characterization and fashioning within the production process, and can be systematically transferred to various fields of application.

The strengths of TU Dortmund University in this flagship program lie in the processing and coating of materials. These include, for example, lightweight structures, the engineering of surfaces and resource-efficient production, which are being studied in long-term, large project networks. The insights gained here flow back to the material developers in order to optimize product properties. By establishing the UA Ruhr professorship “Virtual Machining” by the Mercator Research Center Ruhr (MERCUR) at the Faculty of Computer Science of TU Dortmund University, the flagship program will be further strengthened. The aim is to advance the digitization of production processes and to simulate manufacturing processes in such detail that a direct optimization of the production process is possible.

C Competence Field Metropolitan Research

In addition to the flagship programs, the UA Ruhr competence field “Metropolitan Research” was launched in 2017. The aim is to establish an internationally visible center for the research of metropolitan areas and their development, for which the Ruhr region is ideal. In seven research fields, more than 100 professors network with external research institutions and industrial partners

from the region. At TU Dortmund University, the interdisciplinary competence field receives key support from the Faculty of Spatial Planning and the Institute for State and Urban Development Research. Other participants are scientists from the Faculties of Architecture and Civil Engineering, Arts and Sports Science, Culture Studies and Educational Sciences, Psychology and Sociology. Collaborations have been initiated with regional associations and municipalities, and existing collaborations are being expanded. The Faculty of Spatial Planning will submit a proposal for a graduate school named “Restructuring Polycentric Metropolitan Areas”.

3.2 Further perspectives

TU Dortmund University promotes excellent science in all faculties. Top-level research is also carried out outside the main profile focus areas.

- As an indication of this academic excellence, the Faculty of Physics was awarded two ERC Grants in 2016. The participation in the CRC/ TR 142 “Tailored Nonlinear Photonics: From Fundamental Concepts to Functional Structures” also demonstrates the research strength of the faculty in addition to the activities described above within the profile areas.
- The Faculty of Electrical Engineering and Information Technology conducts internationally recognized research on electromobility, energy transmission and energy efficiency. Its prominent position is reflected in the research group 1511 “Protection and Control Systems for Reliable and Secure Operation of Electrical Transmission Systems” and the coordination of the DFG priority program “Hybrid and

Multimodal Energy Systems: System Theoretical Methods for the Transformation and Operation of Complex Networks”. The research center for high-voltage direct current transmission, which is currently under construction and unique in Germany, will further strengthen energy research. The test center will provide the necessary infrastructure for developing, optimizing and verifying components and equipment for use in high-voltage direct current (HVDC) transmission, thus accelerating the energy transition in Germany. Commissioning of the test center is planned for 2018. In the course of the NRW state competition for research infrastructures, a study was also acquired on infrastructural and testing requirements for mixed loads for the evaluation of insulation coordination for HVDC networks. The Faculty of Electrical Engineering and Information Technology is also coordinating the DFG priority program “Hybrid and Multimodal Energy Systems”, which was established in 2016, from which it also carries out four sub-projects.

- Sociology and the social sciences have increased in scope and importance in recent years. In a Sociology Round Table, sociologists from several faculties have agreed to jointly focus their research on the topic of “Aging Societies”. The Social Research Center, as the central scientific institution of TU Dortmund University, is also successfully conducting international research on concepts of social innovation and change processes. It is the coordinating partner of several international research consortia, e.g. in the framework program of the European Union for research

and innovation “Horizon 2020”. The growing strength of sociology and the social sciences may require new structures.

- TU Dortmund University is one of the leading journalism institutions in Germany. The “European Journalism Observatory” (EJO) analyzes trends in international journalism and compares journalism cultures in Europe and in the U.S.. The responsible head of the German editorial office is based at the Erich Brost Institute for International Journalism at TU Dortmund University. Under the heading “Journalism in a Global Context”, a project at the Erich Brost Institute is pursuing the role of the media in connection with today’s migration movements. Two planned projects – “International Journalism” and “Transparency” – also have great potential and are intended to further strengthen journalism research at TU Dortmund University.
- Within the UA Ruhr, two further subject areas have been identified which are based on the productive cooperation of the participating scientists: Together with the University of Duisburg-Essen, the Faculty of Economic Sciences of TU Dortmund University has announced a project proposal on “Regional Disparities and Economic Policy”. Scientists of the Faculty of Mathematics are involved in the application of a research project “Mathematical Methods for Nonlinear Material Laws”.

3.3 Research infrastructures

Internationally visible cutting-edge research relies on an infrastructure that optimally supports the research and scientists of the university. This includes large-scale research equipment and

laboratories as well as support services for the application and execution of research projects.

With the Dortmund electron storage ring (DELTA) as the central scientific facility, TU Dortmund University has the world's only university-run synchrotron radiation source. The installation of special magnet structures enables the generation of soft and hard synchrotron radiation. DELTA is used by researchers from TU Dortmund University as well as external research groups, such as the Leibniz Institute for Analytical Sciences (ISAS), Forschungszentrum Jülich or the University of Wuppertal and brings together national and international researchers.

Scientific Computing and High Performance Computing (HPC) are of major importance for many areas of fundamental and application-oriented research at TU Dortmund University. The IT and Media Center (ITMC) of the university offers the high computing power and storage capacities required for this with high-performance computers such as the Linux HPC Cluster (LiDO). It thus supports the Dortmund Center for Scientific Computing (DoWiR), an interdisciplinary center in which more than 50 scientists from TU Dortmund University and its partner institutions bundle competencies and resources in scientific computing and high-performance computing.

In close cooperation with the faculties, the University Library and its subject librarians ensure a demand-oriented and up-to-date stock of – increasingly digital – literature. The University Library portfolio includes advisory and support services, e.g. on modern publication formats such

as Open Access publications, which TU Dortmund University promotes as part of its Open Access strategy, and on academic identity management. The Office of Research Support Services and the University Library work closely together to establish a central research data management system.

The Office of Research Support Services assists scientists in applying for research projects and advises them on the selection of funding instruments and programs. In the case of EU collaborative projects, upon request the office also takes on the coordination of the project by assuming management tasks in all project phases.

3.4 Institutional cooperation with research institutions

In addition to the special connection with Ruhr University Bochum and the University of Duisburg-Essen in the UA Ruhr, TU Dortmund University is connected by cooperation agreements with a dozen research institutions in Dortmund and the surrounding area. Joint professorships facilitate particularly close relationships with the Max Planck Institute of Molecular Physiology, the Fraunhofer Institute for Material Flow and Logistics (IML) and the Fraunhofer Institute for Software and Systems Engineering (ISST), the Research Institute for Regional and Urban Development Research (ILS), the Leibniz Research Centre for Working Environment and Human Factors (IfADo) and the Leibniz Institute for Analytical Sciences (ISAS). The two Leibniz Institutes are simultaneously affiliated with TU Dortmund University, as are the Institute for Gerontology, which

is sponsored by the Research Association for Gerontology, the German Institute for Civic Art and the Research Institute for Technology and Disability. TU Dortmund University is also closely linked to the Federal Institute for Occupational Safety and Health (BAuA) through a cooperation agreement. INVITE GmbH is a public-private partnership of TU Dortmund University, Heinrich Heine University Düsseldorf and Bayer GmbH. With the IML, the university founded the LogistikCampus. TU Dortmund University and the Fraunhofer Society are intensifying their cooperation with the interdisciplinary research center for logistics.

3.5 Academic career paths

Scientists and scholars are the key to maintaining and expanding the research capacity at TU Dortmund University: particularly the professors stand for competitive and internationally visible research.

Until 2022, more than 100 new professorships are to be filled. The university attaches great importance to quality-oriented, fair and transparent appointment procedures in order to recruit excellent candidates in research and teaching for each of these professorships. High quality standards are essential in all stages of the process, from the establishment and announcement of a professorship, the selection process, and up to and including the appointment negotiations. Experienced professors commissioned by the Rectorate, the Appointment Management Unit set up by the Rectorate in 2015 and the Equal Opportunities Officer or her representative in the respective faculty accompany each appointment procedure and ensure the quality of the

procedures. TU Dortmund University also guarantees the highest standards in all appointment procedures based on a detailed appointment manual. Comprehensive information accessible to all parties in the appointment portal provides for the necessary procedural transparency. The equality of women and men is a fundamental principle of TU Dortmund University. Therefore, in all appointment procedures, suitable female candidates are identified and actively invited to apply. Gender competence training courses, which are offered to the members of appointment commissions, aim at a reduction of gender stereotypes. In order to further strengthen the internationalization of TU Dortmund University, the search for the best candidates beyond national borders is a standard practice. The university has systematically expanded its dual career service. It is aimed at the partners and families of newly appointed professors who wish to live and work together in the Dortmund region. The “Expatriation Service Center” of the City of Dortmund supports professors and their families in close coordination with the university by offering a wide spectrum of information and services. The range of services, which extends from support in dealing with the authorities to information about the local school system and the city’s cultural offerings, is particularly aimed at top international staff.

In the next few years, TU Dortmund University will significantly expand the tenure track program for the career path of junior professorships. For this purpose, promising research areas were identified in each faculty, which shall be strengthened by the establishment of tenure track professorships. Due to the success of this concept in the

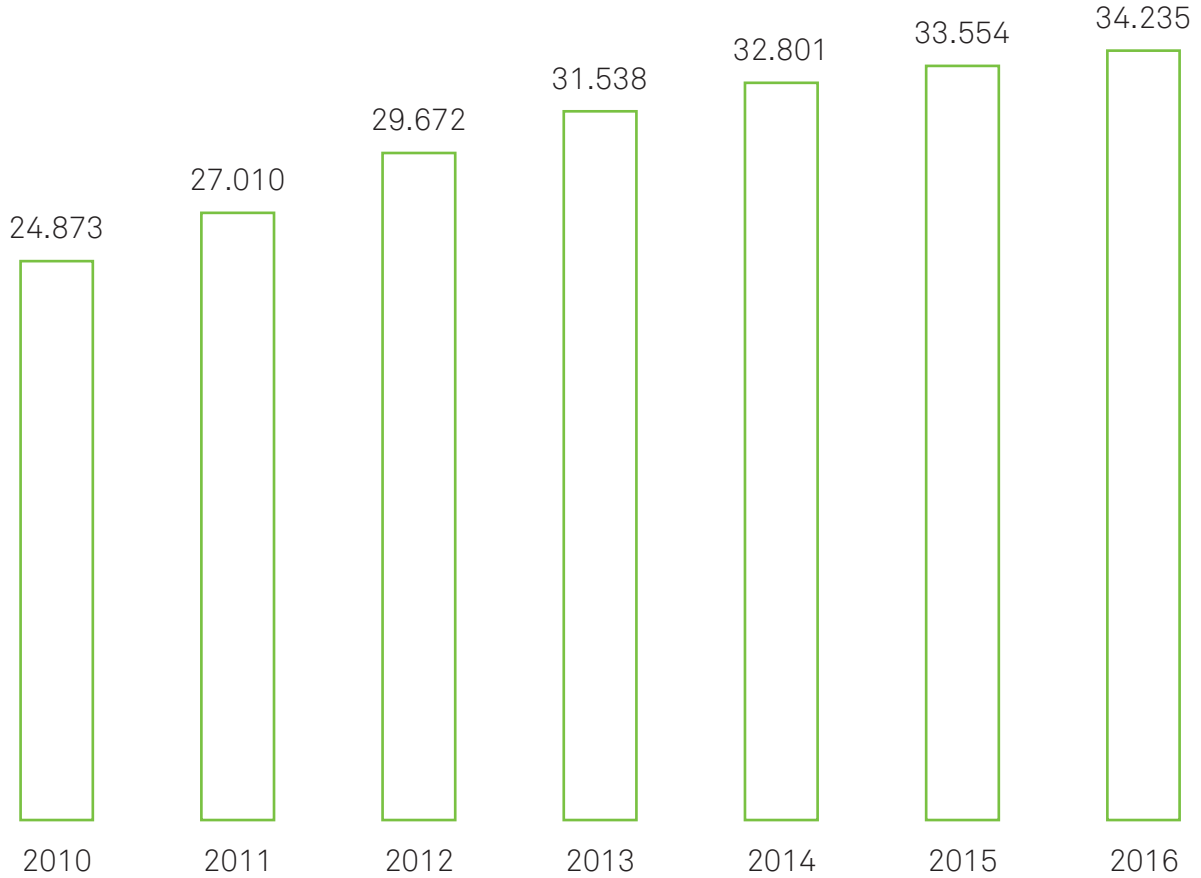
“Joint Program of the Federal and State Governments for the Promotion of Young Scientists”, TU Dortmund University will receive 14 million euros in the coming years to support 15 tenure track positions. Since all faculties have agreed to fill an additional professorship in the tenure track process by taking part in the program, TU Dortmund University will create options for at least 32 young scientists on this career path until 2028. Young researchers contribute directly to the research success of TU Dortmund University. Here, too, the goal of the university is to attract the most talented scientists and prepare them for a career within or outside of science in the best possible way. Since 2014, TU Dortmund University has been implementing its concept for promoting career opportunities for research staff to offer academic employees post-doctoral career options in science apart from a career as a university teacher. This ensures that important permanent tasks in research, teaching and other scientific areas are taken over by experienced scientific staff. Today, about half of the postdoctoral fellows financed from state funds are employed in permanent positions. TU Dortmund University is striving to link individual measures for the promotion of young scientists and scholars even more purposefully with the successful concept of promoting the career opportunities of the university’s academic staff.

Graduate and doctoral schools offer excellent research conditions and opportunities for professional and personal further qualification for young scientists in the doctoral phase. TU Dortmund University aims to further increase the number of graduate and doctoral schools.

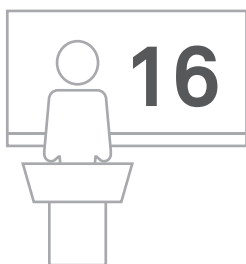
In cooperation with its partners in the UA Ruhr, TU Dortmund University will expand its offerings for the promotion of young scientists and scholars. Supported by the federal state of NRW and MERCUR, the UA Ruhr is using its cooperation potential in the “Research Academy Ruhr” (RAR) to promote young academics. Building on the “Global Young Faculty” and the “ScienceCareerNet Ruhr”, the RAR will bundle location-related initiatives and expand them with additional offerings. In order to support the interdisciplinary dialogue, the RAR will bring together young scientists and scholars from all academic disciplines.

4. Teaching and Studies

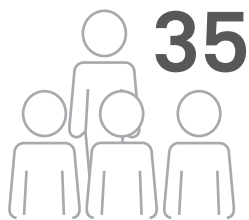
Number of students



Degree Programs



Faculties



Bachelor's degree programs



Master's degree programs

4.1 Degree programs

The 16 faculties of TU Dortmund University currently offer thirty Bachelor's and about forty Master's degree programs. The degree programs encompass the natural sciences and engineering disciplines of mathematics, statistics, physics, chemistry and chemical biology, computer science, bio- and chemical engineering, mechanical engineering, electrical engineering and information technology. The degree programs of the Faculties of Spatial Planning and of Architecture and Civil Engineering complement this portfolio. In addition, more than 2,500 students are currently enrolled in degree programs of the Faculty of Business and Economics. The spectrum in the humanities, cultural studies and social sciences ranges from educational science and rehabilitation sciences to human and language sciences to journalism courses with different emphases. Degree programs in the fields of art, music, sports as well as fine arts and cultural mediation round off the program. Over thirty subjects and subject areas can be combined in five Bachelor's and Master's degree programs for teacher training, and the qualification for all school types can be acquired.

TU Dortmund University will continue to offer its established spectrum of degree programs in the future. Bachelor's courses at TU Dortmund University are basic degree programs that provide a broad-based qualification profile. Building on this, Master's programs offer the possibility of greater specialization. The university will moderately supplement its offering with new degree programs, e.g. with a new Master's program "Religion and Politics", which is currently in planning.

In the coming years, TU Dortmund University will pay particular attention to the expansion of attractive international English-language Master's programs.

All degree programs provide the students with the current state of knowledge and involve the students in research. Therefore, studying at TU Dortmund University opens up a professional future for students in research or practice, in disciplinary and interdisciplinary fields of work, in national and international contexts, and enables them to play a responsible and independent role in shaping the future of science, education, culture, technology, business and society.

TU Dortmund University welcomes the coalescence of the global community and, through its internationalization strategy, increasingly contributes to sensitizing and qualifying its students and graduates for work in international contexts. The university will strengthen the existing exchange programs for students who are going abroad for a study stay or traineeship in terms of quality and quantity and further increase flexibility in recognition of study achievements. The number of students going abroad shall be increased to 15 percent of all students. With its concept of "Internationalization at Home", TU Dortmund University also promotes the internationalization of the campus, with particularly the International Meeting Center (IBZ) being a central location for international and intercultural activities and encounters between German students, students from other countries with a German Abitur (school leaving certificate) or equivalent and international students.

The high demand for study places over the course of the last years confirms the attractiveness of the study program offered by TU Dortmund University. Between 2008 and 2017, the number of students increased from around 22,000 to more than 34,000 students. In total, about 6,000 undergraduate students enroll at TU Dortmund University every year. The university will continue to do its part to enable as many prospective students as possible to study. For the third phase of the Higher Education Pact, it has undertaken to include a total of 5,783 additional students in the first semesters of the years 2016-2020 above the base number determined by the federal state of NRW. The university receives 18,000 euros from the Higher Education Pact for each additional student and 4,000 euros for each graduate of an undergraduate study program. The funds available under the Higher Education Pact to cope with the high number of students are used in such a way that personnel and material resources are made available in all faculties to meet the requirements.

The ratio between professors and students has continuously deteriorated in recent years as a result of rising student numbers and insufficient basic funding for universities. The quality improvement funds allocated by the federal state of NRW will therefore continue to be used preferentially for the recruitment of teaching staff in the future. Since the total amount of quality improvement funds is limited by law, this will not be sufficient for a substantial improvement of the mentoring ratio if the number of students rises sharply. TU Dortmund University will therefore make a special effort to improve the mentoring ratio between professorships and students

by increasing the basic funding and other suitable measures.

4.2 Further development of degree programs and teaching

TU Dortmund University continuously develops its degree programs. The faculties regularly review the quality of their degree programs, also with the assistance of external experts, and make necessary adjustments. The study conditions and the didactic development of teaching are also reviewed. The goal is to attract committed and motivated students to choose to study in Dortmund and enroll in a challenging and interesting degree program, and to guide the increasing numbers of suitable students to a successful degree in the coming years.

Together with its partners of the regional education initiative “RuhrFutur”, TU Dortmund University is conducting a student survey in order to identify possible study obstacles, especially in the introductory phase of the studies. In addition, the university has developed a degree program monitoring, which also provides valuable information for the further design of the courses. Critical study phases are identified so that the further development of the degree programs can be targeted.

In regular annual meetings with the Prorector Academic Affairs, all student representatives of TU Dortmund University have the opportunity to convey their concerns directly to the Rectorate.

Since a successful degree program already begins with the choice of the subject, TU Dortmund University supports prospective students in selecting the degree program that best suits their interests and abilities in terms of profile and requirements. This is the mission of the “Dortmunder Zentrum Studienstart” (DZS), offering a combination of interdisciplinary counseling and specialist support for students of all subjects in the field of mathematics since 2015. The center, which is operated jointly with the Dortmund University of Applied Sciences and Arts, helps prospective students to gain a comprehensive and realistic picture of mathematical requirements at an early stage, as experience has shown that these are a considerable obstacle for many first-year students.

In order to prepare future teachers for a school of diversity, the teacher training courses require new concepts for teaching that supports all school students individually. The DoProfiL project not only focuses on the development and research of teaching concepts for inclusive schools (see Chapter 3.1.1 D Education, School and Inclusion). As a strategic change project, it looks at the entire teacher training offered at TU Dortmund University along with its structures and develops them further in a targeted, didactic way.

4.3 Infrastructures for teaching and studies

The exchange between teachers and students is essential for good teaching: in lectures and seminars, practical courses and exercises, knowledge is conveyed and findings are further developed. Without appropriate organizational framework

conditions, high-quality teaching cannot be realized. It is therefore the aim of TU Dortmund University to ensure optimal study and examination conditions and to continuously develop the corresponding infrastructures and processes.

The University Library is a decisive success factor for research, teaching and studies. For students, the University Library not only offers the required literature and comprehensive research facilities,

but also more than 1,500 reading and workstations with different equipment. Until 2022, the building of the University Library will be completely modernized and renovated and converted into the main building of TU Dortmund University. The building will become a central contact point for the University Library, central service facilities and administrative offices.

In the years to come, the centrally managed lecture halls and classrooms of the university will be comprehensively modernized in terms of media technology. The focus is put on the digitization of audio and video equipment using a modular concept that is tailored to the respective event room.

The use of digital media is also playing an increasingly important role in interactive teaching and learning scenarios and e-learning offerings. TU Dortmund University offers many opportunities, e.g. advising teachers on the didactic conception of e-learning, blended learning offerings and support for collaborative work in teaching and research through appropriate digital platforms. In the coming years, the university will promote digital innovations in teaching in an even more

targeted manner.

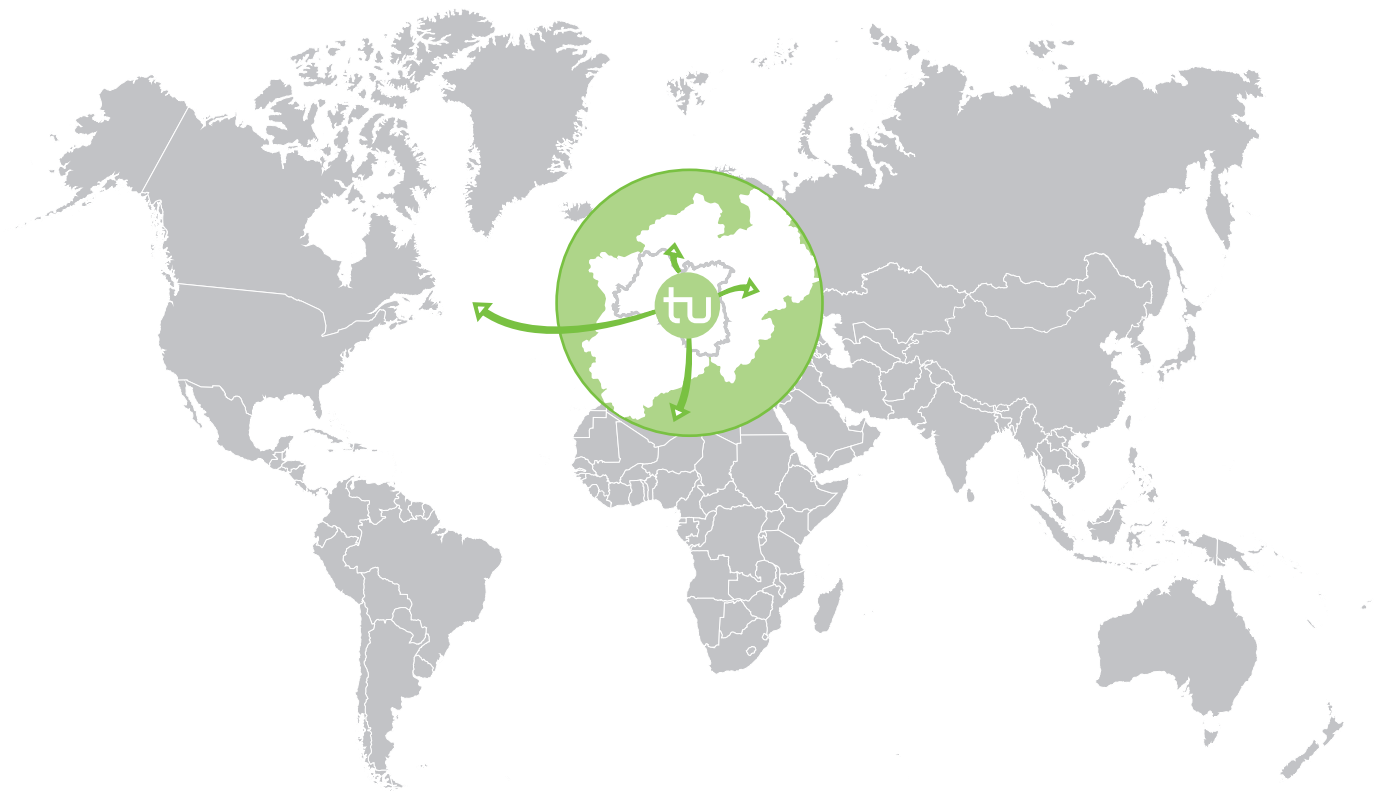
The extensive range of advisory services offered by TU Dortmund University makes an important contribution to student orientation. In addition to guidance counseling for the particular subject, all faculties have established study coordinators. The decentralized counseling services are supplemented by the services offered by the Central Student Advisory Service and jointly developed further. TU Dortmund University focuses on specific target groups with specific offerings: The “Dortmund Competence Center for Teacher Training and Teaching / Learning Research” (DoKoLL) offers information and counseling for the academic concerns of students planning to be teachers. The International Office provides expertise and offerings for international students as well as students of TU Dortmund University who are planning a semester abroad. The “Department of Disability and Studies” (DoBuS) supports students with disabilities and chronic illnesses.

In the Center for Higher Education (zhb), all university teachers have access to advanced and further training courses on topics of higher education didactics, which also support them in developing and testing innovative teaching concepts, thus providing new impulses for the didactic development of the degree programs.

In order to further improve its campus management services, TU Dortmund University has decided to introduce integrated campus management software. The goal is to organize study operations even more effectively and transparently. Students, staff, teachers and examiners should

be able to use the IT functions required for their different needs with as little effort as possible. The Campus Management project, in which faculty and central administration staff, university teachers, students and staff councils work closely together, shall be completed in 2022.

5. Cooperation and Transfer



cet Centrum für
Entrepreneurship &
Transfer.

tu | kultur


UA RUHR

windo .
Wissenschaft in Dortmund

Numerous international cooperation partners

The knowledge gained and generated in universities contributes significantly to the social, cultural and economic development of society. The collaboration between researchers from different disciplines with industry, society and policymakers in government greatly promotes the transfer to social and technical innovations.

5.1 Knowledge and technology transfer, entrepreneurship

TU Dortmund University is a national and international leader in knowledge and technology transfer. The university is (co-)founder and shareholder of the TechnologieZentrumDortmund GmbH (TZDo), which is located in the immediate vicinity of the campus. It is the core of one of the largest technology parks in Europe and very successfully promotes the application of scientific findings and ideas. Around 350 high-tech companies and service providers with around 10,000 employees transform their research and development ideas into marketable products and services at the TZDo. The active networks and synergies between science and industry at the TZDo promote the development of companies for future-oriented technologies.

TU Dortmund University is one of the leading start-up universities in Germany. For its “tu>startup” concept, it was supported by the EXIST program “Start-up Culture – The Start-up University” from 2012 to 2016. Since the beginning of the project, more than 100 new start-up companies have been successfully mentored by the university. Since the beginning of 2017, the newly founded university institution Center for Entrepreneurship & Transfer (CET) initiates, promotes

and fosters business start-ups and transfer from science. The CET brings together the scientific expertise of the Faculty of Business and Economics with the services of the administration under a common management. It actively supports students, graduates and employees in the development and implementation of business ideas and in the evaluation, registration and exploitation of inventions and patents. For the CET, close cooperation with partners from the region, such as the Economic Development Agency Dortmund, the TechnologieZentrumDortmund, the Dortmund Chamber of Industry and Commerce and the Chamber of Trades and Crafts, is of essential importance. The project “StartUP.InnoLab-Westphalian Ruhr Area” started in October 2017. The project will be carried out under the consortium leadership of the CET in cooperation with the Economic Development Agency Dortmund, the TechnologieZentrumDortmund, the Dortmund University of Applied Sciences and Arts and the Hamm-Lippstadt University of Applied Sciences and will establish an accelerator program for innovative and technology-oriented start-up teams and young companies.

The CET also supports the transfer of technologies and knowledge through the further development of an inventor and intellectual property culture that aims to further increase the number and quality of invention disclosures and intellectual property rights. TU Dortmund University has already achieved numerous successes in terms of the quantity and quality of its patenting activities and will continue to develop its transfer activities by participating in the transfer audit of the Stifterverband.

TU Dortmund University established TU concept GmbH in January 2018. For the first time, this opens up the opportunity to support TU start-ups by participation in the financing and represents an essential element in supporting start-ups at TU Dortmund University.

5.2 Regional cooperation

TU Dortmund University is closely connected with the city of Dortmund and the region and is involved in networks for the further development of Dortmund as a center of science. It cooperates with local research and educational institutions and contributes to a vibrant urban culture with cultural events.

Bereits 1992 war die Universität Dortmund Already in 1992, the University of Dortmund was a founding member of windo e.V., the network of university and non-university science and research institutions in Dortmund. windo has developed into a strong science network that strengthens the cooperation of Dortmund research institutions and contributes to making Dortmund known as an attractive science and research location.

In order to further strengthen Dortmund as a science location, representatives from science, industry, the city and society developed the “Science Master Plan” in 2013. In the measures agreed in the Master Plan, science, business and industry and the city community cooperate to achieve this common goal. Of the 100 measures that are to be implemented by 2020, more than half of have already been completed, and more than 30 others are in the process of being implemented and are on the right track. For many German

science locations, the Dortmund Science Master Plan is a role model and a benchmark.

Shaping educational transitions together – TU Dortmund University is networked with local and regional educational partners on the basis of this maxim. Together with five other universities in the region, TU Dortmund University is part of the educational initiative “RuhrFutur”, a joint project of the Mercator Foundation and the federal state of NRW with the city of Dortmund as well as five other cities in the Ruhr region and the Ruhr Regional Association. The aim of the initiative is to improve the educational system in the Ruhr metropolitan area in order to provide all children and young people in the area with access to, participation and success in education. The university is linked to Dortmund’s schools in a variety of ways and maintains close contact, not only through the “Talent Scouting” project, in order to pave the way for school students to the university.

5.3 Activities impacting society

At TU Dortmund University, approximately 4,500 students successfully complete their studies, and more than 250 young graduate students receive their doctorates each year. The highly qualified junior staff not only ensures the knowledge-based further development and innovation ability of society in Dortmund and the surrounding area. A survey of graduates of TU Dortmund University showed that 57 percent of graduates remain in Dortmund or the region. Further 25 percent take up employment in the federal state of NRW. The “female.2.enterprises” project will continue to contribute to the retention of female academics in the region in the future. It provides support to

female graduates on their career path to a management position in companies in Dortmund and in the region.

TU Dortmund University also has an impact on society with its extensive range of further education and training opportunities. With the “Center for Higher Education” (zhb), one of the largest institutions for further education in North Rhine-Westphalia, the university offers certificate study courses, seminar series, language courses, further education congresses as well as counseling and qualification programs for university didactics. The “Deutsche Akademie für Pädagogische Führungskräfte” (German Academy for Education Managers) (DAPF), which is supported by the zhb and the “Center for Research on Education and School Development” (IFS) of TU Dortmund University, offers qualification opportunities for leaders at schools, in school management or in school administration. The part-time certificate degree program “Data Science and Big Data” deals with the latest scientific findings regarding the management and analysis of large amounts of data. The continuing education certificate “German as a Second Language” enables both teachers and trainers in companies or adult education pedagogues to professionally organize language promotion and teaching in schools and in adult education.

The University’s close ties with the city of Dortmund are also expressed in numerous cultural events. The “KinderUni” series of events is aimed at young schoolchildren in Dortmund. In events specially designed for children, the professors convey exciting facts about science and research

in a fun way. The Faculty of Physics also invites Dortmund citizens to the “Studium Fundamentale” course on Modern Physics called “Zwischen Brötchen und Borussia” (Between Bread Rolls and Borussia). On Saturday mornings, the series of events presents and explains interesting phenomena from physics. In the lecture series “Bild und Klang” (Image and Sound), the city church St. Reinoldi becomes a lecture hall. The regular evening events provide a forum in the city for interdisciplinary dialogue between art history, musicology and city history.

Numerous music ensembles – from the TU Dortmund University Orchestra to big bands, symphonic wind orchestra and guitar ensemble to various choirs – enrich the cultural scene of the city.

The university has a branch in the city: the University Floor in the tower of the Dortmunder U. Here, the university demonstrates that art and creativity occupy an important place in the university and that science is an important part of culture. With the “Campus City” – the University Floor in the Dortmunder U – the university has consciously established a venue outside the campus in the city center with offerings for the residents of Dortmund.

Each year, TU Dortmund University opens its doors and invites citizens of the city and the region to an open house. This day offers the opportunity to present rooms, laboratories, machinery halls, projects and services of the faculties as well as facilities of TU Dortmund University to a broad public and thus provide insights into the operations of the university.

6. Gender and Diversity Management



As of 2017: 23 % female professors



Target 2019: 28 % female professors

Ensuring equal opportunities and dealing constructively with diversity are strategic goals of TU Dortmund University and comprise an integral part of its daily activities. Diversity and equal opportunities management contributes to fulfilling the university's mission in research and teaching in the best possible way and to removing barriers on campus. The activities of TU Dortmund University are broadly diversified, systematically anchored in mainstreaming processes and secured by reliable structures. These include the gender-sensitive promotion of young scientists and scholars, transparency of appointment procedures, gender-sensitive public relations and gender controlling as well as support with childcare, the implementation of compensatory measures for disadvantages and dual career offers. The Prorectorate Diversity Management further develops the diversity management strategy of TU Dortmund University and is supported operationally by the Office for Equal Opportunity, Family and Diversity.

As early as 2012, the university completed the "Shaping Diversity" audit procedure of the Stifterverband and received an award for its diversity strategy. With the intended re-audit, the university will undergo a renewed review of its strategy and further develop it.

6.1 Equal opportunity

TU Dortmund University promotes equal opportunity on many levels. Established instruments are the equality concepts and the gender equality percentages for professorships which have been defined in all faculties. Currently around 23 percent of professorships are occupied by women.

TU Dortmund University will use every opportunity to increase this percentage. The current target agreed for 2019 is a university average of 28 percent. The university appointment regulations, appointment management and appointment portal contribute to gender equality by ensuring that appointment procedures are gender-equitable and transparent. Young female scientists are actively supported in the planning of their scientific career by various offers. The "ScienceCareerNet Ruhr" has been established with its mentoring program, especially for women scientists. Over the next two years, TU Dortmund University will be working with the "Research Academy Ruhr" (see Chapter 3.5 Scientific Career Paths) to systematize and systematically expand its offerings. Gender sensitivity will be a central point in this process. Some degree programs at TU Dortmund University are still characterized by gender stereotypical choice behavior. For example, some engineering courses are dominated by male students, while female students predominantly enroll in e.g. the primary school teacher degree program. The university will continue to promote the reduction of gender-segregated student choice behavior. It will continue its close cooperation with local and regional schools. Programs like "Girls' Day",

"Boys' Day" or "MinTU" (Girls at TU Dortmund University) and "12+ – Mentoring for Boys" continue in cooperation with the faculties.

The strategies and reliable processes established at TU Dortmund University to promote equal opportunity were rewarded in 2013 by the German Research Foundation with the classification as the (highest) Group 4 in research-oriented

equality standards

6.2 Accessibility

The elimination of barriers for people with disabilities and/or illnesses is a declared objective of TU Dortmund University. With the “Department of Disability and Studies” (DoBuS), TU Dortmund University can look back on 40 years of commitment and expertise in support of disabled and chronically ill students. Own scientific projects flank the helpful and necessary service offerings of DoBuS: the implementation service for the adaptation of study materials, special workplaces for students with disabilities as well as personal counseling for students and teachers. TU Dortmund University was thus a pioneer with regard to the recommendation made by the German Rectors’ Conference (HRK) General Assembly in 2009: “A university for all”.

Within TU Dortmund University, DoBuS is systematically integrated into many processes: with the accreditation of degree programs, with changes to examination regulations, with construction projects or the modernization of the IT equipment of the lecture halls, as well as with the further development of the campus app or the development of tactile and auditory campus information for the planned modernization of the University Library. The declared goal for the next few years is to further expand disability mainstreaming.

In 2016, the “Aktion Mensch” magazine recognized the outstanding quality of DoBuS nationwide and presented TU Dortmund University as a good example for students with disabilities. In the same year, DoBuS was awarded by the international

“Zero Project”. TU Dortmund University is thus one of three universities worldwide that have been honored for their inclusion orientation.

6.3 Family and dual career

TU Dortmund University strives to optimally support its employees and students in reconciling family with studies or career. As early as 2014, TU Dortmund University signed the “Family in the University” charter and since then has been a member of the Best Practice Club of the same name. TU Dortmund University intends to maintain and extend its commitment to family friendliness for the coming years.

Flexible working hours in the academic field and in university administration are now standard. The family portal on the website of TU Dortmund University offers information on topics relating to the reconciliation of studying or working with family responsibilities and is heavily frequented by students and employees with children. In recent years, the expansion and consolidation of childcare services has been successful.

The childcare program “9 x kluge Zwerge” for children under three and short-time childcare are an integral part of the university childcare offerings. For four holiday weeks a year, a childcare program is offered for school children between the ages of six and 13. Cooperation with nearby daycare centers has been improved, so that the number of children of TU Dortmund University members who have day care places near the university is constantly increasing. TU Dortmund University will continue to work in this direction. A new service to be implemented in 2018 will be

emergency childcare for the children of academic staff members.

To exploit the full potential of the region for dual-career counseling, TU Dortmund University relies on local and regional networking. For example, the Rector of TU Dortmund University is chair of the windo association, which among other things, supports a family-friendly development of Dortmund as a location for science. At the regional level, the “Dual Career Network Ruhr” (DCNR) is part of the University Alliance Ruhr: In the project funded by the Mercator Foundation and coordinated by the Mercator Research Center Ruhr (MERCUR), the three UA Ruhr universities are networking with each other and with other universities, research institutions, associations, government agencies and companies in the region in order to increase the chances of a successful job search in the region for partners and spouses of top scientists who are undergoing the recruitment process.

6.4 Educational justice

As a university of the Ruhr area, TU Dortmund University brings together people from different regions, nations, cultures and social backgrounds. The University sees this diversity as an asset and an opportunity to learn from each other and with each other. TU Dortmund University actively contributes to shaping the educational system so that access to educational opportunities is possible irrespective of origin or social status. The federal state of NRW is supporting the “talent scouting” project at TU Dortmund University until the end of 2020. The talent scouts discover and advise talented students at schools in the region

who have not yet considered studying. With talent scouting, TU Dortmund University is helping to open the way to university studies for young people, whether or not their parents have an academic background. TU Dortmund University is also part of the educational initiative “RuhrFutur” with the aim of sustainably improving the educational system in the Ruhr metropolis and making educational success possible regardless of the origin of the individual.

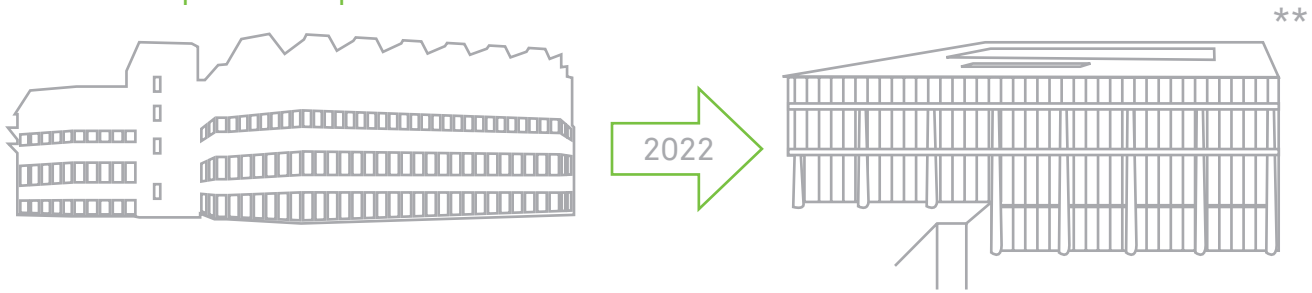
The DoProfiL project described in section 3.1.1. qualifies future teachers to provide individual support and enables them to design schools and lessons in a manner compatible with educational justice.

In order to open up access to educational opportunities for young people coming to Dortmund, professors, employees and students of TU Dortmund University are committed to the integration of refugees. For example, in the “TU@Adam’s Corner” project, where every Tuesday university teachers help shape the program of the Adam’s Corner Learning and Meeting Center in the western district of Dortmund.

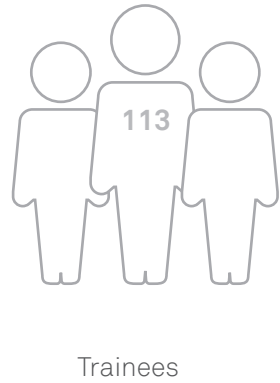
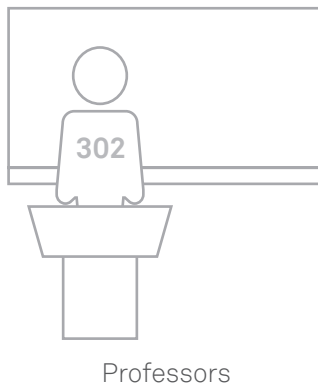
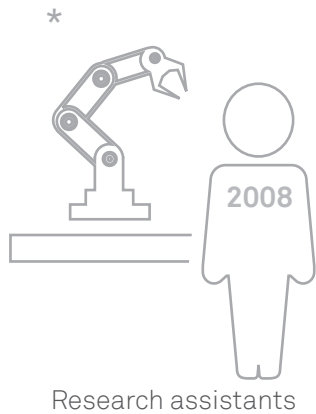
A clearing office set up with the support of the Mercator Foundation in the International Office advises and supports refugees who wish to begin their studies. And through TU Dortmund University’s participation in the program “NRWege ins Studium” of the federal state of NRW, it is also possible to arrange scholarships for preparatory German courses.

7. Organization and Development

Campus development



Personnel



* Skizze zu Entwurf von Imke Woelk und Partner Architekten, Berlin

In the future, TU Dortmund University wants to continue being strong in research, successful in teaching and efficient in all areas. It guarantees this with an appropriate organizational structure and governance. In addition to the best scientists and scholars and a modern structural and technical infrastructure, this requires a service-oriented administration that supports scholarship and removes bureaucratic obstacles.

7.1 Organizational structure and governance

The university's core is made up of its scientific activities with 16 faculties in natural sciences and engineering, social sciences and cultural studies. In addition, there are central scientific institutions, such as the DELTA – Center for Synchrotron Radiation at TU Dortmund University, the Center for Higher Education (zhb), the Social Research Center (sfs) and the Dortmund Competence Center for Teacher Training and Teaching / Learning Research (DoKoLL) as well as affiliated institutes and cooperating scientific institutes.

Three central service facilities support scientific operations: The IT and Media Center (ITMC) is the central service provider for IT tasks and provides a modern and efficient IT infrastructure for the members of the university. In addition to reading rooms and group study rooms, the University Library offers numerous services for scientists and students. The Center for Entrepreneurship & Transfer (CET) promotes the culture of entrepreneurship at TU Dortmund University with its extensive range of services.

The central administration is a service facility for

students, teachers, researchers, employees and prospective students. Its structure and processes are organized to provide services on demand and in a timely and customer-oriented manner, thus sustainably supporting the university's tasks in teaching and research.

The university has various representatives and ombudspersons – for example, representatives of student assistants or the severely disabled, data protection officers, compliance officers – who, like the staff council and the equal opportunities officer, exert their influence on university policy as required by Germany's co-determination law.

In accordance with the North Rhine-Westphalia Higher Education Act (Hochschulgesetz – HG), the university has a Rectorate Constitution, and the Rectorate is elected as the highest governing body by the University Election Assembly. The University Council advises the Rectorate and supervises its management. The Senate is responsible for enacting and amending the basic rules and regulations of the university and issues recommendations and statements on the most important decisions of the Rectorate.

In the Faculty Conference, the deans meet regularly to advise the Rectorate, the Senate and the University Council in accordance with section 23 of the North Rhine-Westphalia Higher Education Act (Hochschulgesetz – HG). Permanent commissions of the Senate complete the central committee structure.

In the further development of its structures and organization, the university relies on systematic

dialogue between the Rectorate, faculties, committees and administration. It uses a variety of communication formats for this purpose. At the Rector's invitation, researchers from different faculties who pursue related research questions come together in round table discussions. As a consequence, for example, the Round Table on Drug Research has now become the "Center for Integrated Drug Research", a decisive link between basic research and application in the field of drug research. Expert dialogues have proven their worth in reflecting on the strategic orientation of institutes or faculties. In one- to two-day events moderated by members of the Rectorate, institutes and/or faculties have the opportunity to sharpen their future perspectives with external scientists and academics. At fireside evenings, the Rector and Chancellor regularly take the time – without a fixed agenda – to with various professors in small groups in order to exchange ideas. During regular visits by the Rector, each individual faculty has the opportunity to present its perspectives. The Deans have discussion meetings with the Rector on "jour-fixe" dates.

The university is advised on strategically important issues by thematic working groups. For example, a working group headed by the Rectorate Commissioner for Internationalization develops recommendations for the university's further internationalization strategy. The Chancellor heads the Sustainability Working Group, which initiates and implements projects for the sustainable further development of the university. A new working group has been set up to analyze the state of digitization at TU Dortmund University and to develop suggestions for increasing the

digitization of processes in research, teaching and administration.

7.2 TU Dortmund University as employer

With around 6,200 employees in academic, administrative and technical staff, TU Dortmund University is one of the largest employers in Dortmund. At the same time, it currently provides vocational training for around 100 young people in 19 different training occupations. In order to attract and retain the most talented scientists, the university relies on methods and procedures of human resources development. In doing so, it understands human resources development holistically: beyond personnel recruitment, it includes all procedures and instruments that enable employees to successfully fulfill their tasks, to further their professional qualifications and to participate in the development of the university. Additional support services are integrated into human resources development, e.g. for reconciling family and career or for health and integration management.

In recent years, the university has significantly strengthened the topic of human resources development in terms of organization and personnel: within the Department of Human Resources and Legal Affairs there is a Human Resources Development Unit, which centrally organizes the selection of personnel for administrative and technical positions, coordinates further education and training opportunities and operates the university health management system. The employees of the Appointment Management Unit are involved in all phases of appointment procedures and thus support their transparent and legally

compliant implementation.

The university integration management, which supports employees returning to work after long periods of illness, has been strengthened in terms of personnel and organization by the establishment of a new staff unit. It is clear that the commitment of the university to health management is paying off: the number of employees on sick leave is significantly lower than at other institutions in the education and administration sectors, as statistics from a large health insurance company regularly show.

Other university members who have special expertise also contribute to human resources development. These include the staff representatives, the Office of Equal Opportunities, the Office of Family Affairs and Diversity, the Equal Opportunities Commissioner, the Representative for the Disabled and the Office of Research Support Services, which offers the Research Academy Ruhr's programs for young academics. The Ideas and Complaints Management Unit VIBA (German abbreviation for "improvements, ideas, complaints and suggestions") uses the creativity of its employees specifically for the further development of the university administration. VIBA has been accepting ideas, praise and criticism from university employees since 2012. More than 500 suggestions have been submitted since then, demonstrating the employees' commitment to their university. A commission headed by the Chancellor decides which ideas shall be implemented. If necessary, the VIBA team supports the implementation. The best ideas are rewarded by a bonus system.

One focus of the university in human resources development is on leadership development. In an ongoing program, administrative managers continuously develop their skills. Junior executives are prepared for management tasks and methods of leadership in special modules. One component of management development consists of regular management conferences at which the heads of departments, offices and staff units, central service facilities and offices work together with the university management to develop concrete projects for the further development of management and cooperation. This dialogue is also continued at fireplace evenings, to which the Chancellor regularly invites the management level of the administration.

Today, TU Dortmund University has attained a high standard in human resources development. It has implemented centrally coordinated human resources development concepts and formats that ensure the best possible selection of personnel as well as the best possible training and further education for specific target groups. It is the aim of the university to continue these programs on the current level and to further develop them using proven quality assurance instruments.

7.3 Financing and finance management

For the year 2016, the total expenditure of TU Dortmund University amounted to 309 million euros. The major part of the expenditure, about two thirds, was spent on personnel. Only just under 56 percent of total expenditure is secured by the basic funding of the university. The remaining budget is made up approximately equally of temporary program and third-party funds and 4.5

percent of quality improvement funds.

The 2021 NRW Higher Education Agreement between the federal state of NRW and universities provides for the continuation of part of the funds that have so far flowed from temporary programs. For example, a large part of the state share from the Higher Education Pact will be transferred to university budgets by 2021. The funds previously allocated as project funding for the reform of teacher training and as compensation for the extension of the study duration for students studying to become teachers of the higher civil service grade will also be continued until 2021. Nonetheless, the challenge will remain of using the scarce resources of basic funding in such a way that the university will continue to have sufficient room for maneuver for the further development of research and teaching.

Therefore, TU Dortmund University has reformed its internal distribution model in recent years. Today, the university allocates its funds with needs-based and performance-oriented budgeting. The science budget is allocated to the faculties based on the criteria of the needs and services. The budgets thus determined can be freely used by the faculty. This creates scope for the implementation of individual development strategies.

TU Dortmund University is currently establishing a comprehensive reporting system based on a business intelligence system. Various data such as student, financial and personnel data flow into the system. A systematic reporting system based on this serves to prepare steering-related information in such a way that faculties and

committees can use it for their work.

7.4 Construction/Campus Development

As part of the university modernization program (HMoP), the replacement of the new chemistry/physics building was erected at Otto-Hahn-Strasse 4a and handed over to TU Dortmund University in summer 2015. This creates the prerequisites for further implementation of the sectional core renovation of the existing chemistry/physics building. Around 200 million euros are to be invested in this by 2028. In the context of this measure, an additional new building, the practical training center, is to be constructed from 2018 onwards and the refurbishment of the physics experiment hall is to begin at the same time.

The largest and most important planned construction project is the modernization of the University Library. The existing building in the center of the campus will become the central contact point for students and visitors of the university and will be the main building of TU Dortmund University. For this purpose, the building will also contain areas for the study services as well as for university bodies, committees and the administration. The construction project will transform the University Library into an attractive and modern center. The financing of this measure, amounting to around 80 million euros, was secured through the university construction consolidation program (HKoP). The modernized building is expected to be completed in 2022.

In addition, it is an overarching objective to realize at least one research building in accordance with section 91b GG at TU Dortmund University in the

next few years.

Furthermore, the largest lecture hall building of TU Dortmund University, Lecture Hall Building II, will undergo a comprehensive overhaul in the coming years in order to eliminate the existing backlog of refurbishment work.

The extensive repairs required on the Chemical Engineering and Emil-Figge-Strasse 50 buildings as well as on the outdoor sports facilities will also continue. An energy-efficient combined CHP plant with combined heat, power and cooling will be built on the South Campus.

The total renovation costs for the buildings of TU Dortmund University are expected to amount to more than 350 million euros by the year 2028.

