



**TECHNISCHE
UNIVERSITÄT
DRESDEN**



International Master's Programmes

Master's Programmes taught in English

Studies and Campus Life



TU Dresden is the biggest university in Saxony and one of eleven universities of excellence in Germany. 32,400 students, including 15.5% international students, study in more than 120 degree programmes. TUD promotes the achievements of the students, both before and during their studies, with a wide-ranging module system consisting of counselling and support programmes. To ensure that new students feel at ease right from the start, there are a broad range of welcome and information events. Tutors provide help and advice and so-called buddies make it easier for international students to adapt to the university's daily routine.

Together with the numerous computer labs, WIFI throughout the entire campus makes it easy to learn and work. Those seeking a quiet place with a great number of resources will find it in the Saxon State and University Library Dresden (SLUB). It is one of the largest and best-equipped academic libraries in Germany.

Food is also provided on campus. Every day, around 20,000 guests enjoy their meals in the canteens and cafeterias of the Studentenwerk Dresden (student union). These are among the best in Germany.

If you feel the need to clear your head from the daily learning routine, you can register for more than 40 different types of sports at the University Sports Centre (USZ). You can also learn a foreign language for free or take part in one of the many cultural and social programmes offered by the student university groups. Fellow students from more than 125 countries can meet and get to know each other at language tandem nights, on joint excursions, by designing and building a race car or by constructing an airplane.

For more reasons to choose TU Dresden and all relevant information at a glance, check ↗ tu-dresden.de/why-tud

Dresden is the capital of the Federal State of Saxony and with more than half a million inhabitants among the twelve biggest cities in Germany. Apart from its turbulent history, it is also most famously known for its diverse cultural landscape.

No matter whether you are interested in theatre, opera, cabaret, and cinema or if you enjoy a stroll through museums or a night out at the pub, there is something available for everyone.

You can also get active in the many sports facilities in Dresden, including TU Dresden's own, or in the surrounding nature of the Elbe landscape, the Elbe Sandstone Mountains (Elbsandsteingebirge) or the Ore Mountains (Erzgebirge).

For those interested in weekend excursions during their studies, not only the surroundings of Dresden have plenty to offer but also Berlin, Prague, Leipzig and Wrocław are easy to reach and only a short distance away.

Dresden for Students



Except for Cartography, all English taught master's programmes at TU Dresden start in the winter semester only, i.e. on Oct 1st each year. The application period for international applicants usually commences on April 1st of the same year. The application deadlines vary according to your educational background and your nationality, so please make sure to check online.

TU Dresden is a member of uni-assist e.V., the service organization for international university applications. We have commissioned uni-assist to accept and examine application documents from applicants who have graduated from foreign secondary schools or institutions of higher education. The application for all English taught master's programmes at TU Dresden (except for Cartography and Tropical Forestry) for applicants with a non-German first university degree is handled via uni-assist. You can find all further info at ↗ tu-dresden.de/application.

Please note that several of the master's programmes include an aptitude review procedure to verify that the first university degree matches the scientific requirements of the master's programme.

TU Dresden is a public university and does not regularly charge any tuition fees. However, students are required to pay a semester contribution of currently 275€ for one semester (i.e. 6months). Included is a ticket for public transport and nextbike, a bike sharing company in Dresden.

In general, Dresden offers very high quality of living at moderate costs compared to other big German cities. For your basic costs, i.e. rent, food, clothes and personal items, you should calculate with about 650 to 700€ per month.

Depending on your background and the programme you have chosen, there are various possibilities for financial support, including specific scholarship programmes. Please check the respective master's programmes website or see ↗ funding-guide.de for the DAAD database of scholarships.

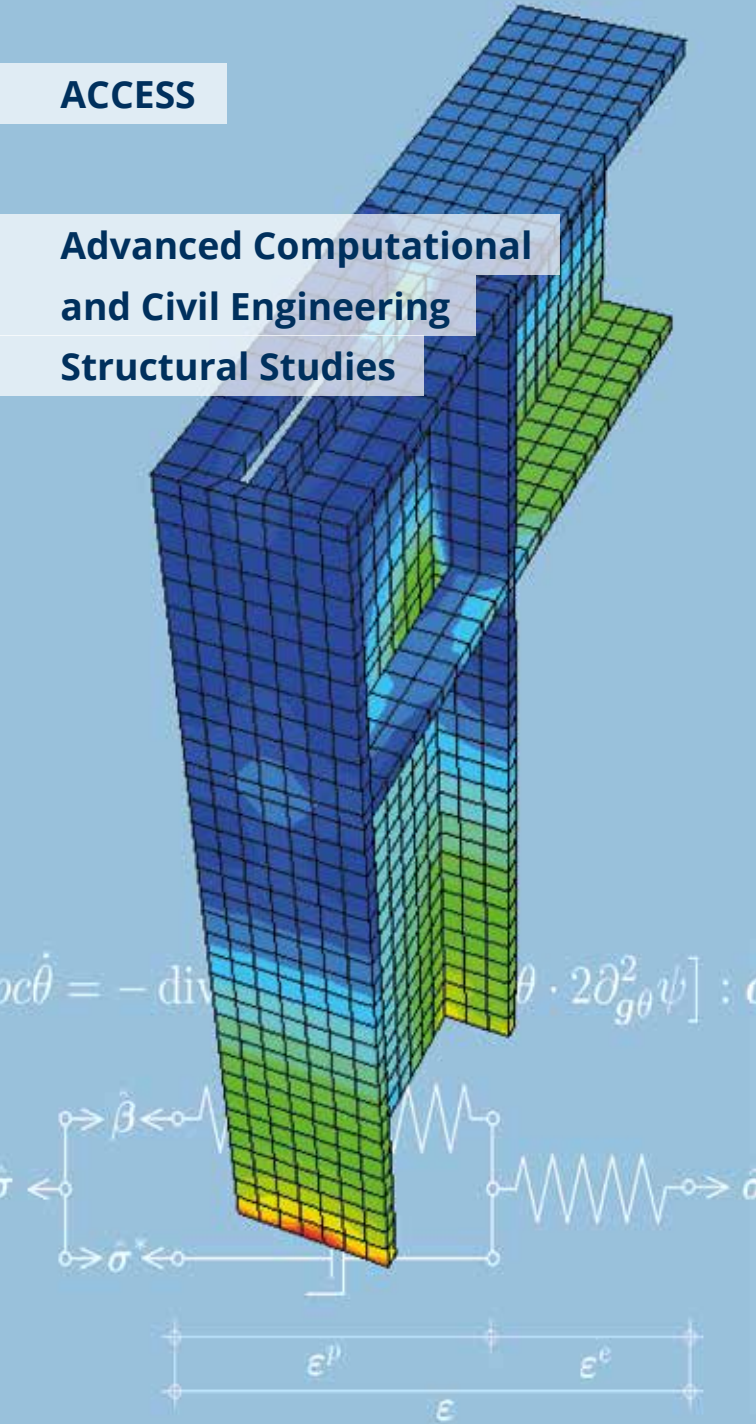
Please also keep in mind that there might be additional funding possibilities in your home country!

Application Procedures and Finances



ACCESS

Advanced Computational and Civil Engineering Structural Studies



Advanced Computational and Civil Engineering Structural Studies (ACCESS) seeks to facilitate the development of a strong knowledge base in the fields of computational mechanics and structural analysis, working collaboratively with advanced civil engineering design. Technical innovations for challenging engineering tasks rely heavily on numerical simulation tools. Therefore, the goals of this programme are to provide the skills for understanding these approaches as well as modelling and analysing in the broader context of application and design. The focus is on state-of-the-art theory and application of computational mechanics, as well as research in numerical structural analysis, current developments in civil engineering design, and advanced construction methods.

The course of study has a modular structure. The content of the individual modules is imparted, consolidated and treated in-depth in lectures, exercises, seminars, tutorials and projects and has to be accompanied by self-study. Self-study is supported by mentoring.

The course is divided into two parts: The first part lasts three semesters, totalling 90 credit points. It consists of eight mandatory modules, including the project work, and seven modules selected out of 13 elective modules. The second part of the master's programme consists of developing a master's thesis including a colloquium in the fourth semester. For the master's thesis including colloquium, 30 credit points are granted.

Applicants should hold a degree in engineering, preferably civil engineering and possess a good command of English (e.g. IELTS 6.0 or TOEFL 79 ibt).

Further information

- 📍 Faculty of Civil Engineering
- 🔗 tu-dresden.de/sins/ma-access
- ✉ access@mailbox.tu-dresden.de

Biochemistry is a two-year full-time international master's programme that focuses on the molecular foundations of biological processes as well as the manipulation of biological pathways and biomolecules for technological applications.

The programme is organised into two tracks – Chemical Biology and Technical Biochemistry – which cover a wide variety of topic areas including biocatalysis, natural product chemistry, molecular cell biology, genome engineering, and bioanalytics.

The course work consists of five mandatory classroom and laboratory modules, a mandatory research internship, multiple elective courses, and a final experimental master thesis. Graduates earn the degree of 'Master of Science' (M.Sc.) in Biochemistry

To qualify, applicants must have completed their undergraduate degree (three-year bachelor's degree programme or comparable) in chemistry, biology, molecular biotechnology or a comparable scientific field and provide an international English proficiency test at level B2 or better (preferentially IELTS: 6.5, TOEFL: 550 PBT or better).

The master's programme is limited to a maximum of 20 students per year and admission will be granted based on previous academic performance.

Further information

📍 Faculty of Chemistry and Food Chemistry

🔗 tu-dresden.de/sins/ma-biochm

✉ MSBiochemistry@msx.tu-dresden.de

Biochemistry





Biodiversity and Collection Management

Addressing the rapid loss of biodiversity on a global scale counts as one of the key challenges of our time. Detailed knowledge of species and their environment is urgently needed: however, universities increasingly lack resources and expertise to provide specialist teaching on species' taxonomy. To deal with this, IHI Zittau (a Central Academic Unit of TU Dresden) joined forces with Senckenberg, a large natural history research institute (part of the German Leibniz Association), and established a novel research-oriented MSc course.

The programme is unique in linking biodiversity studies with collection management. The curriculum covers aspects of global biodiversity including taxonomy, systematics and ecology, and it develops skills in management and project organisation. The key research infrastructure of the course is centred on learning about collections; the methods and administrative frameworks governing the acquisition, study and maintenance of biological and geological specimens. Throughout the course, students develop a detailed knowledge on biodiversity and palaeontology, have the opportunity to specialise on certain taxonomical groups and learn how to obtain and reliably document data on biodiversity. A secondary focus of the course is on developing project management skills, promoting international cooperation and organizing research teams.

Applicants must hold a degree in biology or related life and environmental sciences and possess a good command of English (i.e. IELTS 6.0 or TOEFL 80 iBT, 550 PBT, 213 CBT).

Further information

- 📍 International Institute (IHI) Zittau
- tu-dresden.de/sins/ma-bcm
- ✉ master-bcm@mailbox.tu-dresden.de

Spatial context is relevant to an enormous amount of questions, problems and decisions. Maps and cartographic communication processes are keys for enabling humans to deal with all kind of spatial data in an efficient way. The domain of cartography can be seen as by definition very broad and interdisciplinary.

The international Master of Science in Cartography was established in 2011 and is a joint programme of:

- Technical University of Munich (TUM), Germany
- Vienna University of Technology (TUW), Austria
- Technische Universität Dresden (TUD), Germany
- University of Twente (UT), The Netherlands

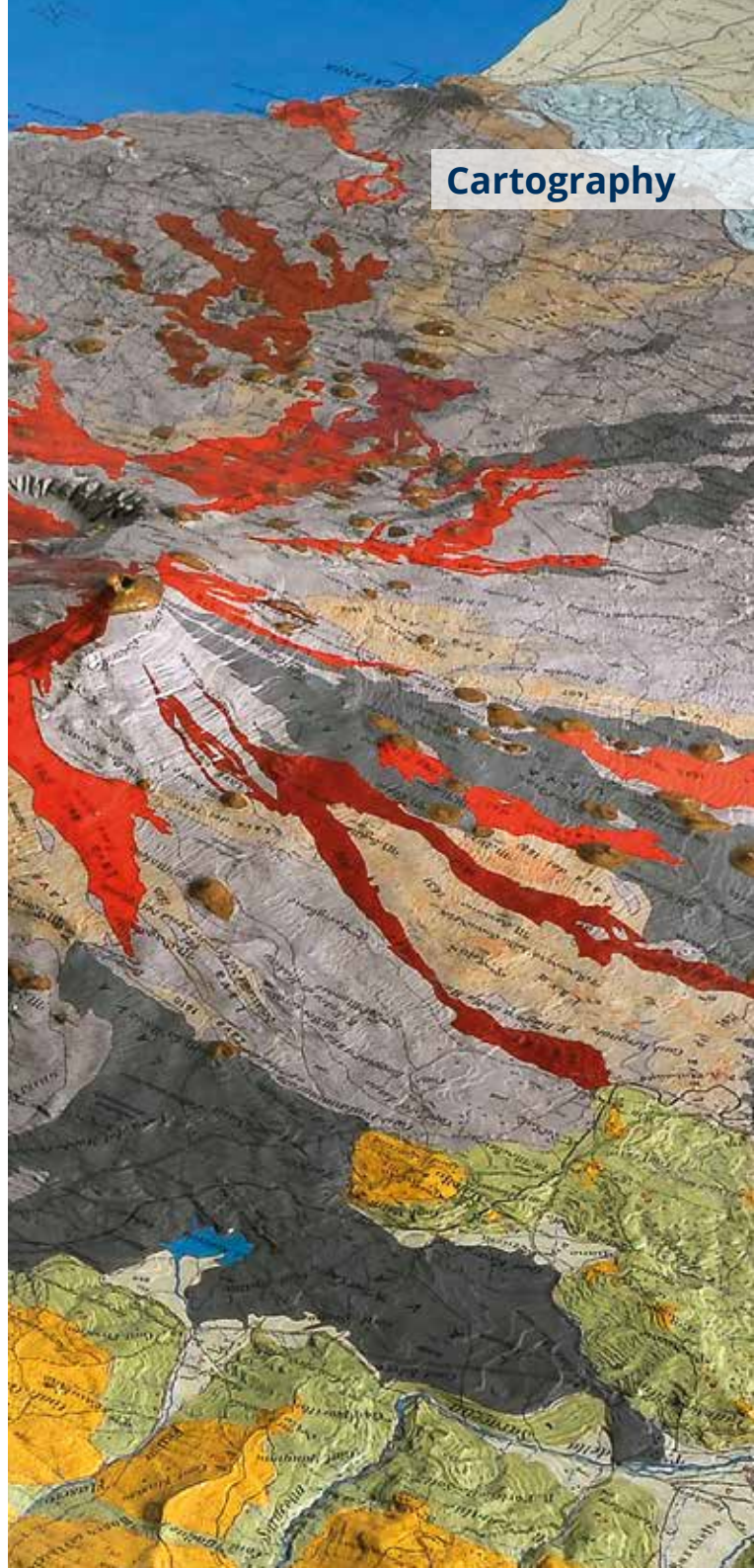
Through the cooperation of four leading universities in the field of cartography the combined comprehensive expertise enables a unique curriculum and provides an exceptional programme with excellent job employment prospects. The programme focuses on a broad education in cartography and geoinformatics, e.g. on spatial information technologies, mathematic principles of map making, spatial data handling, theories and technologies of geovisualization, visual analytics and communication of spatial information.


We are looking for candidates with an above-average bachelor's degree or its equivalent in science or engineering, e.g. cartography, geo-information, geography, geodesy, geology or computer science. Non-native speakers of English will be required to submit a TOEFL (iBT min. 88; CbT min. 234; PbT min. 605), an IELTS (min. 6.5) or a certificate of Cambridge Main Suite (CAE or CPE, Level A, B or C).

Further information

- 📍 Technical University of Munich
Department of Civil, Geo and Environmental Engineering
- ➦ cartographymaster.eu
- ✉ info@cartographymaster.eu

Cartography



A person in silhouette, wearing a striped shirt and dark pants, stands in the foreground pointing towards a large, colorful, abstract projection on a wall. The projection features soft, overlapping shapes in shades of red, orange, yellow, green, and blue, resembling a stylized face or a complex data visualization. The person is positioned on the left side of the frame, facing right.

Computational Modeling and Simulation

The master's programme „Computational Modeling and Simulation“ is a joint curriculum of the Faculty of Computer Science, the Faculty of Mathematics, and the Center for Molecular and Cellular Bioengineering (CMCB) with participation of the Faculty of Psychology, the Faculty of Medicine, the Faculty of Economics, and the Faculty of Mechanical Engineering at TU Dresden.

The research-oriented interdisciplinary and international master's programme offers application-independent training in the foundations of computational modelling (i.e. learning models from data) and simulation (i.e. numerical simulation of models). Specialization is provided in application-specific tracks, offering unique flexibility to students.

The programme also offers the possibility to fast-track into a structured PhD programme, benefitting from the participation of local partners in the relevant fields.

Candidates must meet the following academic admission requirements: first university degree qualifying for professional activity in computer science, mathematics, natural sciences, economics or engineering, special knowledge of computer programming as well as mathematical and scientific basics and knowledge of English corresponding to at least level B2 of the European Frame of Reference for Language (e.g. TOEFL 550PBT/213CBT/80IBT or IELTS 6.0).

Further information

- 📍 Faculty of Computer Science
- 🔗 tu-dresden.de/sins/ma-cms
- ✉ cms-admin@mailbox.tu-dresden.de

The international master's programme in Distributed Systems Engineering is a two-year full-time English-taught programme focused on advanced topics related to the engineering of distributed systems.

The topics encompass the specification, design, analysis, development and operation of distributed systems. Special emphasis is given on designing and developing dependable and secure software for networked and distributed systems.

The course work consists of four mandatory modules, a mandatory internship as well as multiple elective courses and computer lab courses. The writing of a master's thesis is required to complete the programme. Graduates earn the degree of 'Master of Science' (M.Sc.) in Computer Science.

To qualify, applicants must have an undergraduate degree (three-year bachelor's degree programme or comparable) in computer science, software engineering, information systems technology, or comparable. Work experience in software development is welcomed. Furthermore, English proficiency on CEFR level B2 or better, or comparable must be established (e.g. IELTS 6.0 or better in all aspects, MLA at ECCE or ECPE level or TOEFL with reading 13+, listening 12+, speaking 18+, writing 21+ are acceptable).

Further information

- 📍 Faculty of Computer Science
- 🔗 tu-dresden.de/sins/ma-dse
- ✉ dse-info@mailbox.tu-dresden.de

Distributed Systems Engineering



A scenic view of a rugged coastline. In the foreground, there are large, grey, rocky outcrops with some green vegetation. A stone wall runs along the edge of the rocks. Beyond the rocks, a sandy beach is visible, with turquoise water lapping at the shore. The water is a vibrant blue-green color. In the background, the coastline continues with more cliffs and greenery under a clear blue sky.

Ecosystem Services

In the context of the global loss of biodiversity and ecosystem degradation, ecosystem services as the direct and indirect contributions of ecosystems for human well-being are gaining increased attention in science, policy and society. Identifying, mapping and assessing ecosystem services as well as capturing their values in public and private decision-making are important objectives of national, European and international biodiversity strategies. Against this background, the international master's programme on ecosystem services provides students with the knowledge base and methods to analyse pressing environmental problems and to develop societally relevant solutions. A special focus lies on inter- and transdisciplinary approaches from the natural and the social sciences in order to conserve and sustainably use biodiversity and to secure the sustainable provision of ecosystem services for present and future generations.

Alumni are educated for a career in public administration (nature protection or environmental agencies), research and education (universities and research centres), economic and policy consultancy, international organisations (e.g. UNEP, World Bank), non-governmental organisations (environmental NGOs) or scientific management.

Applicants must hold a degree in life or environmental sciences, economics, social sciences, geography, agricultural or forestry sciences or related fields and must possess a good command of English (e.g. IELTS min. 6.0 or TOEFL 80 iBT or 170 cBT).

Further information

- 📍 International Institute (IHI) Zittau
- 🔗 tu-dresden.de/sins/ma-ess
- ✉ master-ess@tu-dresden.de

The graduate programme focuses on water and engineering for various applications from urban to rural in different climatic zones. A successful participation enables the students to acquire and expand their competencies in managing water related issues. This programme meets the international standards necessary to pursue and develop a career with national and international authorities and organizations, engineering and consulting enterprises, as well as in research.

Applicants must hold a bachelor of science degree in environmental sciences, natural sciences, or in an engineering discipline, minimum duration of at least three years. For certain groups of applicants scholarships are available. For details check the web.

Applicants must prove proficiency in English (IELTS: 6.5, all parts minimum 6, TOEFL: 94 points; or equivalent tests showing minimum C1-level according to the European reference framework).

Further information

- 📍 Faculty of Environmental Sciences
Department of Hydrosociences
- 🔗 tu-dresden.de/sins/ma-hse
- ✉ contact.hse@mailbox.tu-dresden.de

Hydro Science and Engineering





Molecular Bioengineering

In the 20th century, physics and biology unveiled the atomic and molecular levels. Now nanotechnology, where technology meets biology, offers potential to meet the challenges of the future. The machines in our cells and in all life on earth are nanomachines encoded by a genetic language. These nanomachines provide functionality at a much smaller scale, greater efficiency, consuming less energy and creating less pollution than available with micro-technologies. We have to understand how to engineer such cellular machines. To realise this vision of molecular bioengineering, the master's programme brings a novel combination of biology, biochemistry, biophysics, materials science, medical science, bioinformatics and nanotechnology together.

The programme Molecular Bioengineering aims to teach students the fundamentals in biomedicine and bio-nanotechnology combining biology and technology in two ways: through biological knowledge of cells to develop the notion of molecular factories; and through nanotechnology and bioinformatics to enable engineering of biomaterials for medical and industrial applications.

The programme is targeted at students with a first university degree in biotechnology, biology, chemistry, physics, materials science, medical science, computer science or nanotechnology and a good command of English (e.g. TOEFL ibt 92 points, IELTS 6.5).

Further information

- 📍 Center for Molecular and Cellular Bioengineering (CMCB)
- tu-dresden.de/sins/ma-molbio
- ✉ molbio@mailbox.tu-dresden.de

Molecules in our cells are genetically encoded nanomachines with amazing functionalities, and they work together in fascinating ways to provide the capabilities that make all life on earth possible. On the one hand it is essential that we describe, harness and engineer cellular machines, and on the other hand we need to understand the dynamics and activities that emerge when many such machines are put together to function in cells and tissues.

This goal can best be reached by providing interdisciplinary training and introducing students with a thorough education in physics or related quantitative subjects to the fascinating fields of molecular biology, quantitative cell and developmental biology, polymer science, biophysics and biophysical theory, bio-nanotechnology, and the amazing world of single molecule approaches.

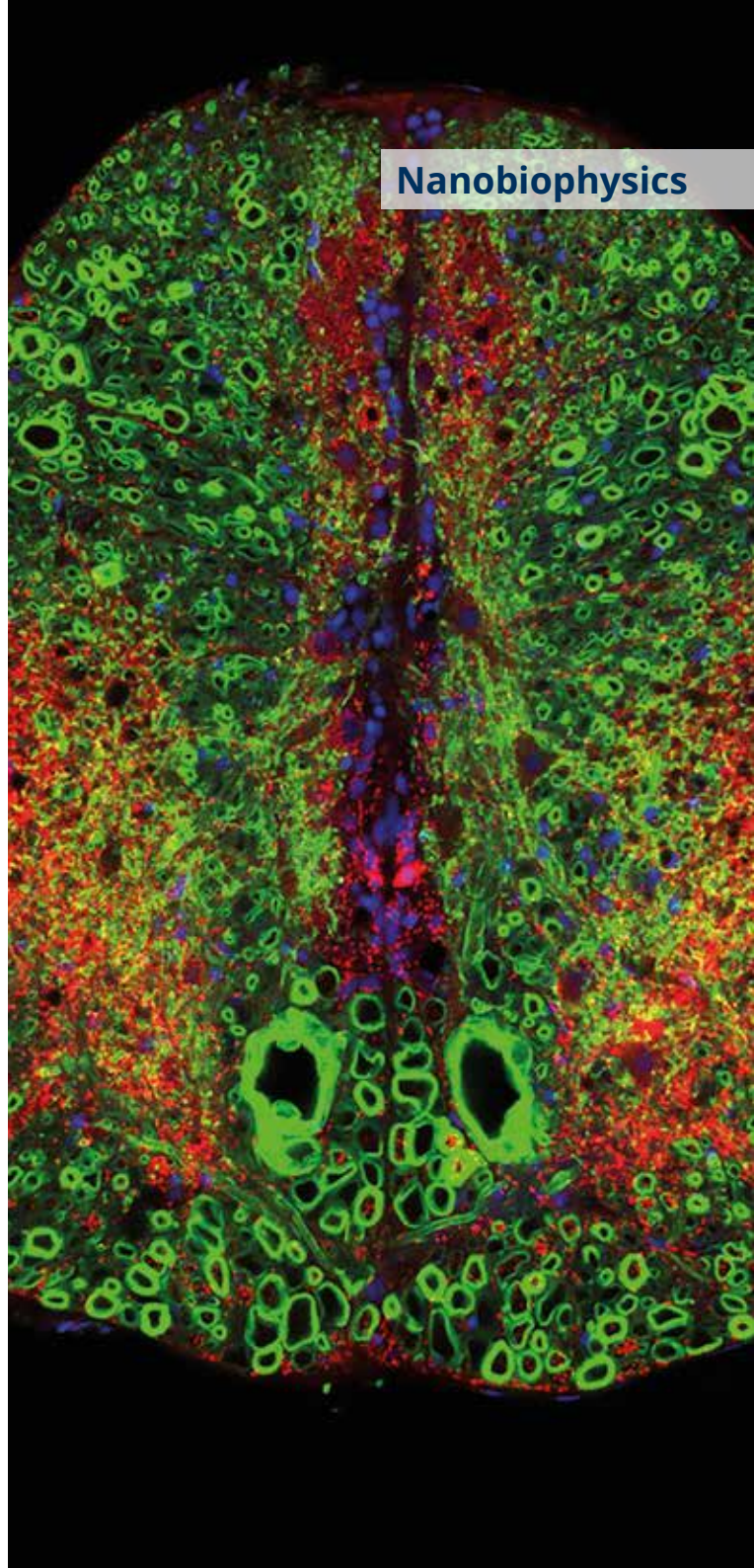
This master's programme intends to teach students the physics of life. Our aim is to provide fundamentals in biophysics, biology and bio-nanotechnology in order to a) better characterise molecular machines, b) discover and understand emergent properties of molecular machines in cells and tissues, and c) harness these molecules in technological systems for bottom-up nanotechnology.

The programme is targeted at students with a first university degree in natural science (typically physics or biophysics) or engineering (ideally nanotechnology) and a good command of English (e.g. TOEFL ibt 92 points, IELTS 6.5).

Further information

- 📍 Center for Molecular and Cellular Bioengineering (CMCB)
- 🔗 tu-dresden.de/sins/ma-nanobio
- ✉ nanobio@mailbox.tu-dresden.de

Nanobiophysics





Nanoelectronics Systems

The ongoing miniaturisation in the microelectronics industry leads to systems that are now being referred to as nanoelectronic systems. Such systems offer a variety of applications, but their design and implementation is becoming increasingly complex. This is the motivation for the master's programme Nanoelectronic Systems. This programme focuses on three key areas:

- Technologies for nanoelectronic systems
- Design of nanoelectronic systems
- Applications of nanoelectronic systems

The correlation/overlap between these areas will also be covered. The program not only focuses on traditional scaling („More Moore“), but also on ideas and concepts for „More than Moore“ and „Beyond Moore“. The practical training (offered in parallel with theoretical concepts) develops skill sets and expertise that can be applied during internships, project work, the master's thesis and the following challenges.

After successful completion of the master's programme, you are prepared for a career in a semiconductor company or in a research institute.

We are looking for candidates with a bachelor's degree in electrical engineering, information technology, physics, or similar with several prerequisites (advanced mathematics, analogue and digital circuit design, electro-magnetic fields, systems theory, operation and construction of basic electron devices, object-oriented programming) and a certificate of proficiency in English C1 (TOEFL IBT 95, IELTS 6,5).

Further information

- 📍 Faculty of Electrical and Computer Engineering
- tu-dresden.de/sins/ma-nes
- ✉ master-nes@mailbox.tu-dresden.de

Organic electronics is an innovative class of electronics with enormous market potential in four key application areas: displays, photovoltaics, lighting, and integrated smart systems. The field is evolving at a rapid pace, opening many exciting application possibilities and developments.

The master's programme in Organic and Molecular Electronics strives to educate young professionals in this innovative type of electronics, predicted to revolutionize technology in the next years.

This interdisciplinary study programme comprises physics, chemistry, electrical engineering, and materials science. It combines theoretical courses with practical trainings and research projects. The close collaboration with industry partners enables a highly practice-oriented education.

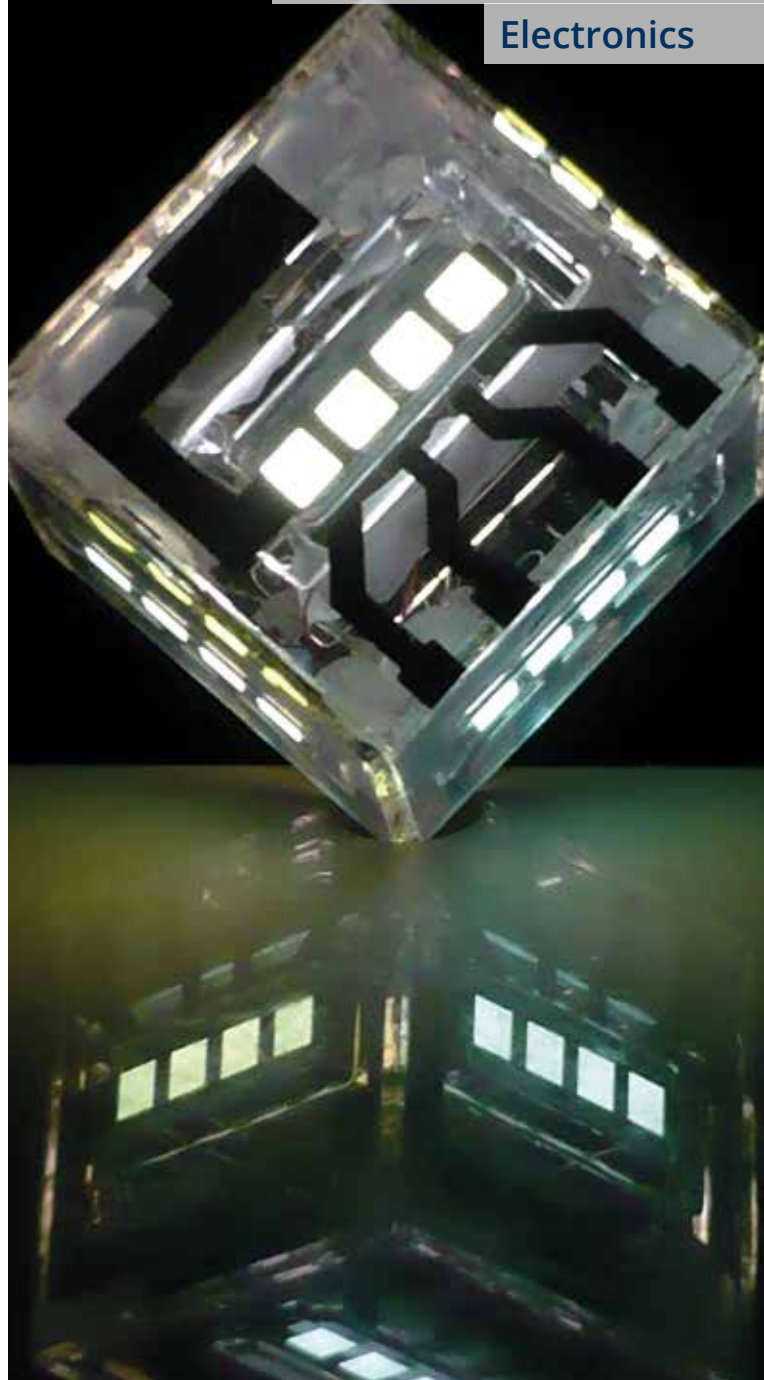
Students learn state-of-the-art developments in the field from a worldwide renowned experts. They have the freedom and ample opportunities to explore topics that interest them and to get involved in research. The programme prepares students for a successful career in science as well as in industry.

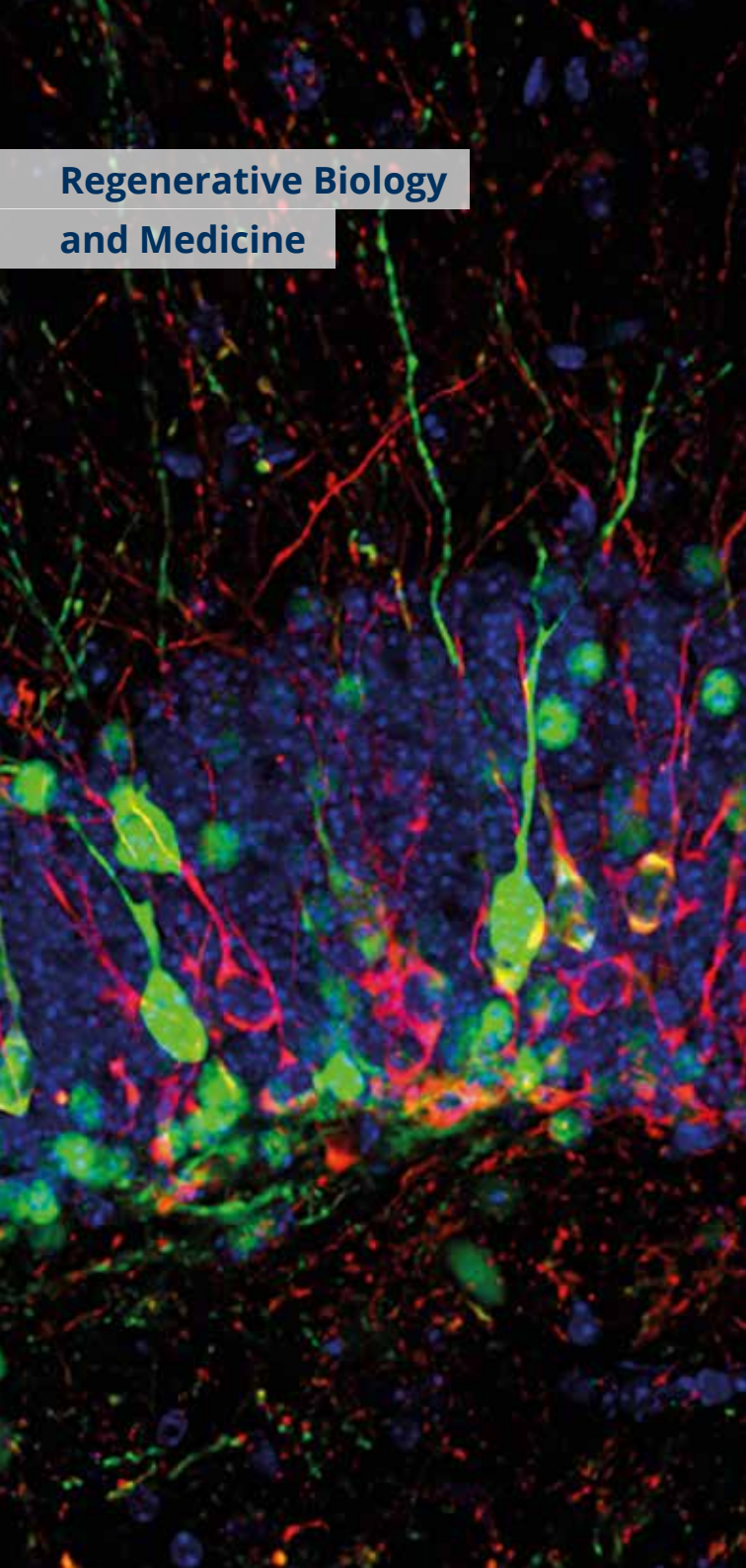
We are looking for candidates with bachelor's or equivalent degrees in physics, chemistry, electrical engineering or materials science; English proficiency at C1-level (IELTS 7,0 or TOEFL 550 PBT/ 79 IBT) and a sound knowledge in physics, chemistry and mathematics.

Further information

- 📍 Faculty of Physics
- tu-dresden.de/sins/ma-ome
- ✉ ome@mailbox.tu-dresden.de

Organic and Molecular Electronics





Regenerative Biology and Medicine

Over the past decade, the focus of traditional biology and medicine has shifted towards a stronger interconnection of the two disciplines, particularly in view of the growing relevance of stem cell research for medicine. Dresden boasts world-class research and scientists working together in the fields of molecular biology, regenerative therapies, bioengineering and biomaterials, represented by the Center for Regenerative Therapies Dresden, the Biotechnology Center, the Max Planck Institute of Molecular Cell Biology and Genetics, the Medical Theoretical Center, the Carl Gustav Carus Faculty of Medicine and the Max Bergmann Center for Biomaterials. This makes Dresden and the Center for Molecular and Cellular Bioengineering (CMCB) the ideal location for the international master's programme in Regenerative Biology and Medicine.

The master's programme offers interdisciplinary education in the field of stem cells, regeneration biology, tissue engineering, and clinically focused human biology and pathology, with the aim of preparing students to perform research that can be applied to regenerative medicine therapies. The programme combines theory with extensive practical experience in the research laboratory with a focus on the scientific fundamentals of stem cell biology and regeneration model organisms as well as recent methods of genomic analysis of stem cells and model organisms, tissue engineering, current and potential applications in clinical diseases.

Our programme is targeted towards students with a first university degree in biology or medicine, or another degree where a solid background in molecular and cell biology is acquired. We also expect a strong command of the English language: non-native speakers need to provide proof of their language proficiency (e.g. TOEFL iBT: minimum level 92 points, IELTS: minimum level 6.5).

Further information

- 📍 Center for Molecular and Cellular Bioengineering (CMCB)
- ➦ tu-dresden.de/sins/ma-regmed
- ✉ regmed@mailbox.tu-dresden.de

Contemporary tropical forestry faces critical challenges due to globalization, climate change and demographic dynamics which need to be addressed by well-trained professionals. In order to safeguard and maintain tropical forest resources and their ecosystem services as well as to enable sustainable rural development, the four-semester study programme places its focus on the diverse relationships of people and forests. With a trans-disciplinary approach the emphasis lies on the socio-economics of farming households, forest and land use economics and policy, as well as on multifunctional forest management, forest ecology and silviculture. Subjects of global concern such as land degradation, climate change, adaptation and mitigation, demographic aspects of sustainable rural development complement the course. The institute aims to qualify competently skilled graduate experts who will develop forest management and rural transformation towards sustainability, under the particular economic, social and ecological aspects.

Therefore, the MSc course provides training in sustainably managing natural and planted forests, as well as urban tree resources in tropical and subtropical regions. The acquired expertise opens wide career prospects in a local, national and international context. Furthermore, the master's programme provides an excellent exchange and networking platform for intercultural cooperation of both South-South and North-South. The two-year course comprises 120 credit points structured as three semesters of classroom studies and one semester in a tropical country to elaborate the master thesis. Optional compulsory modules enable the students to design a particular individual profile.

Prerequisite for access to the master's programme in Tropical Forestry is a university degree in the field of forestry or a related field (e.g. agriculture, horticulture, landscape and regional planning, geography, water management, biology) and knowledge of English (e.g. TOEFL 550 pbT/ 213 cbt or IELTS 6.0).

Further information

- 📍 Faculty of Environmental Sciences
Department of Forest Sciences
- tu-dresden.de/sins/ma-tropen
- ✉ tropen@mailbox.tu-dresden.de

Tropical Forestry





Contact at TU Dresden

ServiceCenterStudies

The service hotline is available via email and phone.

Opening hours

Monday, Wednesday, Thursday 9am - 3pm
Tuesday 9am - 6pm
Friday 9am - 1pm

☎ 0049 351 463-42000

✉ servicecenter.studium@tu-dresden.de

➤ tu-dresden.de/scs

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Service Desk for international students

Visitors address

Strehleener Str. (BSS) 22, 01069 Dresden
6th floor, room 671

Office hours

Tuesday 9.30am - 11.30am and 1pm - 3.30pm
Thursday 9.30am - 11.30am and 1pm - 3.30pm

☎ 0049 351 463-42000

(contact via ServiceCenterStudies)

✉ studium.international@mailbox.tu-dresden.de

➤ tu-dresden.de/international



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Publisher: Technische Universität Dresden

Editors: International Office and Student Marketing

Photos: Amac Garbe Cover, pp. 34/35;

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Effective: April 2019

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