



Deutscher Akademischer Austauschdienst
German Academic Exchange Service



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Master's degree



Advanced Computational and Civil Engineering Studies – ACCESS

Dresden University of Technology • Dresden

Overview

Degree	Master of Science (MSc)
Teaching language	<ul style="list-style-type: none">English
Languages	All courses are held in English.
Full-time / part-time	<ul style="list-style-type: none">full-time
Programme duration	4 semesters
Beginning	Winter semester
Application deadline	31 May for the following winter semester
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	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 programme aims 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 theory and application of computational mechanics, as well as research in numerical structural analysis, current developments in civil engineering design, and advanced construction methods.

Course Details

Course organisation	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.
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The course is divided into two parts. The first part lasts three semesters, totalling 90 credit points. It consists of eight mandatory modules, including an application-based science project and presentation, and five modules selected out of 12 elective modules. The second part of the Master's programme consists of producing a Master's thesis, including a colloquium in the fourth semester. For the Master's thesis including the colloquium, 30 credit points are granted.

Semester one:

Mandatory modules:

- Building Materials
- Continuum Mechanics, Tensor Calculus
- Energy Methods, Finite Element Method
- Numerical Methods
- Mentoring Programme for Study Skills and Methodological Skills

Semester two:

- Mentoring Programme for Study Skills and Methodological Skills

and five modules to be selected from the following 12:

- Design of Reinforced Concrete Structures
- Form Finding of Lightweight Structures
- Timber and Lightweight Structures
- Constitutive Modelling of Soils
- Structural Use of Glass
- Safety Concepts
- Building Physics
- Multiscale Mechanics
- Computational Dynamics
- Modelling and Simulation in Pavement Engineering
- Bridge Design
- Zero Carbon Building Design using BIM and Digital Twins

Semester three:

- Building Information Modelling: Methods and Concepts
- Applications of Computational Engineering Methods
- Project Work

Semester four:

- Master's thesis and colloquium

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A Diploma supplement will be issued	Yes
International elements	<ul style="list-style-type: none"> • International guest lecturers • Projects with partners in Germany and abroad
Integrated internships	None
Course-specific, integrated German language courses	No
Course-specific, integrated English language courses	No

Costs / Funding

Tuition fees per semester in EUR None

Semester contribution Currently, students pay approx. 300 EUR per semester (i.e. for six months), including a ticket for public transport in Dresden (bus, tram, ferry, "S-Bahn" suburban train) and regional trains in the Federal State of Saxony. Students can also use a bike rental service all over the city for free for 30 minutes. The contribution also assures concessions in the university cafeterias and offers benefits (e.g. price reductions) for many cultural and leisure activities in Dresden.

Costs of living Dresden offers high quality of living at very moderate costs. Currently, students should expect to pay around 850 EUR per month including rent, food, insurance and basic expenses. This figure is relatively low compared to other big German cities.

Funding opportunities within the university Yes

Description of the above-mentioned funding opportunities within the university Information on scholarships and funding for students is summarised on a [dedicated web page of the TU Dresden](#).

Requirements / Registration

Academic admission requirements

- University degree in engineering with above-average marks
- Good knowledge of mathematics and mechanics

Language requirements English certificate: IELTS (Level 6.0) or TOEFL (79 points Internet-based)

Application deadline 31 May for the following winter semester

Submit application to <https://tud.de/online-bewerbung>

Services

Possibility of finding part-time employment In order to top up their budget, some students may want to look for temporary work in Dresden. If so, different regulations apply for students from EU member states, countries of the European Economic Area (EEA) and Switzerland, and students from outside the European Union and the EEA area. In addition, restrictions on the duration of employment may apply. Professors, lecturers and group leaders involved in the Master's programme may offer students the possibility of working as academic assistants. However, living expenses can be financed only partially through a job as an academic assistant.

Accommodation It is still relatively easy to find affordable accommodation in Dresden. Accommodation is available

either via the "Studentenwerk Dresden" or on the private market. Rent for a single room in a student residence is approx. 250 EUR per month. Private housing can be found online. We recommend that you move into a hall of residence at the beginning of your stay in Dresden. Subsequently, you can look for a place on the private market or in a shared apartment, which is known as a "Wohngemeinschaft" in German.

Career advisory service

TU Dresden offers plenty of counselling and training by the Career Service to help students with finding professional orientation. They offer workshops to equip students with professional skills and help optimise their CVs.

Additionally, there are special workshops for international students to get to know the German and Saxon job market and network.

Support for international students and doctoral candidates

- Welcome event

Contact

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🌐 Course website: <https://tud.link/1dhh>

📘 <https://www.facebook.com/TUDresden>

🐦 https://twitter.com/tudresden_de

📷 <https://www.instagram.com/tudresden>

📺 <https://www.youtube.com/TUDresdenTV>

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Disclaimer

The data used for this database was collected and analysed in good faith and with due diligence. The DAAD and the Content5 AG accept no liability for the correctness of the data contained in the "International Programmes in Germany" and "Language and Short Courses in Germany".

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