



Deutscher Akademischer Austauschdienst  
German Academic Exchange Service



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# Master's degree



## Physics

Dresden University of Technology • Dresden

### Overview

Degree	Master of Science
Teaching language	<ul style="list-style-type: none"><li>English</li></ul>
Languages	<p>The Master's degree programme in Physics is taught primarily in English.</p> <p>Students can decide to take their examinations for the seminars, lab courses, basic and specialisation subjects in English or German. The language of instruction and examination in the non-physics minor subjects is either English or German and is based on the courses offered in the minor course catalogue.</p> <p>The Physics Master's can thus be studied entirely in English.</p>
Full-time / part-time	<ul style="list-style-type: none"><li>full-time</li><li>part-time (study alongside work)</li></ul>
Programme duration	4 semesters, 8 semesters
Beginning	Winter and summer semester
Additional information on beginning, duration and mode of study	<p>The programme can be started in the winter semester or the summer semester.</p> <ul style="list-style-type: none"><li>Standard period of study for full-time studies: four semesters</li><li>Standard period of study for part-time studies: eight semesters</li></ul>
Application deadline	<p><a href="#">Application deadlines and information on the application procedure are available online.</a></p> <ul style="list-style-type: none"><li>Application deadline for <b>German applicants and educational residents</b><ul style="list-style-type: none"><li>Winter semester: 1 June to 15 September</li><li>Summer semester: 1 December to 15 March</li></ul></li><li>Application deadline for <b>international non-EU applicants</b>:<ul style="list-style-type: none"><li>Winter semester: 1 April to 15 July</li><li>Summer semester: 1 October to 15 January</li></ul></li><li>Application deadline for <b>international EU applicants</b>:<ul style="list-style-type: none"><li>Winter semester: 1 April to 15 September</li><li>Summer semester: 1 October to 15 March</li></ul></li></ul> <p>Please consult the <a href="#">study information pages</a> for further details.</p>
Tuition fees per semester in EUR	None

Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	<p>The Master's degree programme in Physics at TU Dresden aims to consolidate insights into interrelations between different areas of physics as well as connections to neighbouring disciplines.</p> <p>During the one-year research phase, you will acquire the necessary skills to become acquainted with current topics in physics, to design and conduct experiments or develop theoretical methods in this field, to categorise the results and to draw conclusions for applications to technical developments and for general scientific progress.</p> <p>The specialisation areas are:</p> <ul style="list-style-type: none"> <li>• Applied Physics and Photonics</li> <li>• Solid State and Material Physics</li> <li>• Particle and Nuclear Physics</li> <li>• Theoretical Physics</li> <li>• Soft Matter Physics and Biophysics</li> </ul> <p>Collaboration with other subject areas in the natural sciences, technology and the humanities in 12 minor subjects, each with multiple elective topics, guarantees a diverse profile for acquiring a basic understanding of topics in other subject areas and the necessary skills for interdisciplinary work. Examples of minor subjects are:</p> <ul style="list-style-type: none"> <li>• Mathematics</li> <li>• Bio Mathematics</li> <li>• Electrical Engineering, Electronics, Nano-Electronics,</li> <li>• Civil Engineering, Energy Technologies, Aviation and Aerospace Engineering, Hydrogen and Nuclear Energy Technologies</li> <li>• Chemistry (organic, inorganic)</li> <li>• Biology, Molecular Biology</li> <li>• Computer Science</li> <li>• Philosophy</li> <li>• Materials Science, Nano-Science</li> <li>• Economics, Business Administration</li> </ul>

## Course Details

Course organisation	<p>The Master's course in Physics at TU Dresden is structured in two parts: a one-year phase of regular studies with courses and seminars, and a one-year research phase.</p> <p>In the first year, the obligatory courses in experimental and theoretical physics offer a broad overview of modern physics topics and their interconnections. Specialisation courses and a seminar can be chosen in the fields of applied physics, solid state and material physics, particle and nuclear physics, theoretical physics, soft matter physics and biophysics. These topics correspond to the main research areas at the Department of Physics at TU Dresden. In case of experimental specialisation, an advanced laboratory course is part of the curriculum. A non-physics minor can be selected among a large variety of 12 non-physics subjects.</p> <p>The second year of the Master's programme is devoted to a research project, which is divided into scientific research studies and the Master's thesis. The research topic can be chosen within the specialisation areas offered at the Department of Physics and by the affiliated research institutes. The scientific studies and the Master's thesis are usually on a single, overarching research topic.</p> <p><a href="#">More details can be found in the official study documents, which are available online.</a></p>
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<b>International elements</b>	<ul style="list-style-type: none"> <li>• Integrated/optional study abroad unit(s)</li> </ul>
<b>Description of other international elements</b>	<p>The Master's programme in Physics at TU Dresden is international in many aspects:</p> <ul style="list-style-type: none"> <li>• physics students from all continents</li> <li>• international lecturers and tutors</li> <li>• scientific studies, Master's thesis and lab courses in international research groups</li> <li>• curriculum with optional time slot for studies abroad</li> </ul> <p>Beyond the regular curriculum, optional and free-of-charge language courses are offered for all TU Dresden students.</p>
<b>Integrated/optional study abroad unit(s)</b>	<p>The curriculum of the Master's course of studies in Physics foresees the first summer semester as an optional time slot for studies abroad. These studies may be organised within the ERASMUS framework or on individual initiative. <a href="#">Counselling for international studies is offered by the Department of Physics.</a></p>
<b>Integrated internships</b>	<p>The Master's course of studies in Physics integrates practical and advanced laboratory courses in experimental physics specialisation areas. Students specialising in theoretical physics may chose among various practical theory tutorials.</p> <p>Practical laboratory courses may also be offered within the non-physics minors.</p>
<b>Course-specific, integrated German language courses</b>	No
<b>Course-specific, integrated English language courses</b>	No

## Costs / Funding

<b>Tuition fees per semester in EUR</b>	None
<b>Semester contribution</b>	<p>Currently, students pay approx. 290 EUR per semester (i.e. for six months). This includes the Deutschland-Ticket, a ticket for most local public transport (bus, tram, ferry, S-Bahn) and regional trains in all of Germany incl. Dresden. Students can also use a bike rental service all over the city of Dresden 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.</p>
<b>Costs of living</b>	<p>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.</p>
<b>Funding opportunities within the university</b>	Yes
<b>Description of the above-</b>	Information on scholarships and funding for students is summarised on <a href="#">a dedicated web page of</a>

## Requirements / Registration

### Academic admission requirements

Completion of a first vocational university degree recognised in Germany or a qualification from an officially recognised vocational academy in the field of physics or a closely related programme of study such as engineering physics, if the course content in experimental and theoretical physics and the knowledge of applied and mathematical methods imparted correspond to the content of TU Dresden Bachelor's degree programme in physics, i.e. if a well-grounded knowledge of the following is proven:

- the fundamentals of experimental physics in the area of mechanics, electromagnetism, heat and thermodynamics, quantum physics, atomic and molecular physics, solid state physics or nuclear physics or particle physics or biophysics
- the fundamentals of theoretical physics in the area of theoretical mechanics, electrodynamics, statistical physics or theoretical thermodynamics, and quantum mechanics
- physics laboratory training
- mathematical training

### Language requirements

Proficiency in English at the B2 level of the Common European Framework of Reference for Languages

If you do not have a certificate of general or subject-specific university entrance qualification with a basic or advanced course in English (or comparable levels), a certificate for admission to higher education completed in English or a higher education graduation certificate completed in English, then you must provide proof of English proficiency by taking an internationally-offered English test and by scoring accordingly (e.g. IELTS: 6.0, online TOEFL: 75, UNICert II).

### Application deadline

[Application deadlines and information on the application procedure are available online.](#)

- Application deadline for **German applicants and educational residents**
  - Winter semester: 1 June to 15 September
  - Summer semester: 1 December to 15 March
- Application deadline for **international non-EU applicants**:
  - Winter semester: 1 April to 15 July
  - Summer semester: 1 October to 15 January
- Application deadline for **international EU applicants**:
  - Winter semester: 1 April to 15 September
  - Summer semester: 1 October to 15 March

Please consult the [study information pages](#) for further details.

### Submit application to

Online application information:

[TU Dresden, Study Information System, degree programme in Physics \(Master's\) accredited](#)

## 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 counseling and training within its 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
- Buddy programme
- Tutors
- Cultural and linguistic preparation

## Contact

### Dresden University of Technology

Faculty of Physics

Prof Dr Arno Straessner

01062 Dresden

✉ [studiendekan.physik@tu-dresden.de](mailto:studiendekan.physik@tu-dresden.de)

🌐 Course website: [https://tu-dresden.de/mn/physik/studium/master?set\\_language=en](https://tu-dresden.de/mn/physik/studium/master?set_language=en)

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

🐦 [https://twitter.com/tudresden\\_de](https://twitter.com/tudresden_de)

🌐 <https://de.linkedin.com/school/tu-dresden/>

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

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

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# International Programmes in Germany - Database

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[www.daad.de/sommerkurse](http://www.daad.de/sommerkurse)

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Consortium for International Higher Education Marketing  
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