



Deutscher Akademischer Austauschdienst  
German Academic Exchange Service



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# Doctorate



## Doctoral Programme in Computational Neuroscience

Technische Universität Berlin • Berlin

### Overview

Degree	Dr rer nat awarded by FU Berlin, HU Berlin, and TU Berlin; PhD awarded by the Charité, FU Berlin, and HU Berlin
In cooperation with	<ul style="list-style-type: none"><li>• Charité-Universitätsmedizin Berlin (Charité)</li><li>• Freie Universität Berlin (FU Berlin)</li><li>• Humboldt-Universität zu Berlin (HU Berlin)</li><li>• Bernstein Center for Computational Neuroscience Berlin (BCCN Berlin)</li></ul>
Teaching language	<ul style="list-style-type: none"><li>• English</li></ul>
Languages	Courses are held in English.
Full-time / part-time	<ul style="list-style-type: none"><li>• full-time</li></ul>
Programme duration	6 semesters
Beginning	Winter semester
Application deadline	15 March 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	<p>The international doctoral programme at the <a href="#">Bernstein Center for Computational Neuroscience Berlin</a> (BCCN Berlin) is an interdisciplinary research programme. Neuroscience is one of the most intensively developing and important sciences of the 21st century. Understanding the functioning of the brain requires the collaborative efforts of neurobiologists, neuropsychologists, cognitive scientists, medical researchers, computer scientists, mathematicians, physicists and engineers.</p> <p>Computational Neuroscience uses theoretical approaches from this broad range of disciplines to integrate experiment, data analysis and modelling in order to understand the brain. Furthermore, it makes a scientific language available that can be used across disciplines and levels for neurobiology, cognitive science, and information technology. Computational Neuroscience may thus help to solve long-standing research questions, contribute to better prevention and treatment strategies for neural disorders, lead to unified concepts about biological processes, advance</p>

information technologies and human-machine interactions and, last but not least, provide new insight for designing efficient strategies for teaching and learning.

Students who have completed the doctoral programme will have the ability to communicate across these diverse disciplines which will help them to make their own contribution to the fast growing field of neuroscience.

The doctoral programme Computational Neuroscience is hosted by the BCCN Berlin. Doctoral students in the field of Computational Neuroscience can apply for association with the programme. They will benefit of structured supervision through the Faculty of the BCCN Berlin and will have access to the lectures for doctoral and Master's students and to a broad range of courses teaching transferable skills.

The doctoral programme of the BCCN Berlin is one of the programmes united under the umbrella of the [Einstein Center for Neuroscience Berlin](#), which offers a four-year PhD programme with an extended orientation phase.

#### Current information

Teaching takes place mostly in the building of the BCCN Berlin on the Campus Nord of Humboldt-Universität zu Berlin and at the Technische Universität Berlin.

## Course Details

#### Course organisation

Research for the doctoral project forms the major part of the programme, complemented by coursework.

All students participate in a seminar in which they present their individual projects to ensure interdisciplinary interaction.

Invited talks by renowned international speakers take place monthly.

A lecture series on theoretical and experimental neuroscience as well as machine learning is addressed primarily to doctoral students. Lectures are held by principal investigators of the BCCN Berlin twice a month.

Additionally, students follow individualised curricula tailored to their specific needs. These curricula can comprise courses at one of the three major universities within Berlin, related graduate programmes within Berlin, summer schools, workshops or the like.

Furthermore, students are encouraged to participate in soft skills courses.

Students are required to earn 15 ECTS (20 ECTS for the Charité PhD degree) in advanced topics related to their research subject and 10 ECTS in soft skills courses such as project writing, scientific presentation, ethical and legal issues in neuroscience, etc.

Reflecting the interdisciplinary nature of the programme, each student will be supervised by one principal thesis adviser and one co-adviser whose areas of competence cover the topic of the planned thesis research. Together with one to three additional senior scientists, the adviser and the co-adviser will form the student's doctoral committee. About three months after acceptance into the programme, each doctoral student will be required to present a written project proposal and to defend the proposal in front of his or her doctoral committee. Problems regarding the competence and scientific work of the candidate or the quality of the supervision should become obvious at this point, and measures can be taken early enough to resolve these. On an annual basis, such a meeting between the doctoral student and his or her committee will take place in order to monitor the student's progress.

#### A Diploma supplement will be issued

Yes

#### International elements

- International guest lecturers
- Projects with partners in Germany and abroad

#### Description of other international elements

International workshops, symposia, alumni workshops

#### Teaching/work obligations or opportunities

Sometimes doctoral students will be involved in the teaching or tutorial activities of their working groups.

#### 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

315 EUR per semester

#### Costs of living

A minimum of around 1,100 EUR per month

#### Funding opportunities within the university

Yes

#### Description of the above-mentioned funding opportunities within the university

The BCCN Berlin Doctoral Programme does not offer scholarships or doctoral positions. However, it is possible to receive funding from the members of the BCCN Berlin. Contact possible supervisors and check if they have funding for you before submitting your application.

The programme is part of the [Einstein Center for Neurosciences Berlin \(ECN\)](#) The Einstein Center offers one-year [PhD scholarships](#) covering all areas of neuroscience including computational neuroscience. The deadline for these scholarships is December/January for the following winter semester (<https://www.ecn-berlin.de/education/phd-fellowships.html>).

## Requirements / Registration

#### Academic admission requirements

Students with an interest in computational neuroscience and with a strong mathematical background are welcome to apply if they hold an MSc or equivalent degree at the start of the programme.

We strongly advise you to check whether your degree entitles you to gain a doctoral degree in Germany.

#### Language requirements

A copy of a TOEFL test or equivalent certificate of proficiency in English must be provided (non-native speakers only).

Alternatively, coursework in English either at your home university or at a university abroad is acceptable as proof of proficiency in English.

**Application deadline** 15 March for the following winter semester

**Submit application to** <https://www.bccn-berlin.de/applications/>

## Services

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**Accommodation** Finding accommodation in Berlin can be a challenge. Students of the programme have several possibilities to find accommodation. Whatever district they prefer to live in, it is advisable to find a place with access to public transport. This is very convenient in everyday life and can save a lot of time.

If students are interested in residential accommodation, the "Berliner Studentenwerk" offers a number of different options, such as single rooms, apartments, or a shared flat. Rent starts at approx. 300 EUR but these accommodations are quite sought after and thus very difficult to find. Students should expect to pay approx. 500 EUR for rent.

Students can also choose to find a room or flat privately. The coordination office and the "Studentenwerk Berlin" provide links and recommendations for finding accommodation.

**Structured research and supervision** Yes

**Research training / discussion** Yes

**Career advisory service** Career advisory service is provided by the teaching coordination as well as supervisors, soft skill courses on career development and university career service departments.

**Support for international students and doctoral candidates**

- Welcome event
- Specialist counselling
- Visa matters



## Our Partners



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**Raphael Holca**  
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This PhD programme strikes a remarkable balance. First, the balance of support and independence: regular lab presentations and peer meetings provide a reliable structure for your independent project. Then, the balance of hard and soft skills: technical courses are complemented with theatre and presentation workshops, teaching activities and trips to conferences. And finally, the balance between productivity and leisure time: the BCCN attracts brilliant minds. All in all, it's been a great time!

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# Technische Universität Berlin

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Yard of the BCCN Berlin building

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### The Bernstein Center for Computational Neuroscience Berlin

The centre comprises more than 60 research groups working from single-cell level up to macroscopic level, both experimentally and theoretically. It was established in 2004 and is part of the Bernstein Network for Computational Neuroscience. It integrates research groups from Humboldt-Universität zu Berlin, Technische Universität Berlin, Charité – Universitätsmedizin Berlin, Freie Universität Berlin, Potsdam

University and the Max Delbrück Center for Molecular Medicine. It is a member of the Einstein Center for Neurosciences Berlin.

#### **Technische Universität Berlin (TU Berlin) – Paving the Way to the Future**

TU Berlin is part of the Berlin University Alliance and has been selected as one of the eleven German universities awarded the status of "University of Excellence". It strives to promote the accumulation of knowledge and to facilitate technological progress by adhering to the fundamental principles of excellence and quality both in teaching and in research. Strong regional, national and international networking with partners in science and industry is an important aspect in all these endeavours.

#### **Humboldt-Universität zu Berlin (HU Berlin) – The Unity of Research and Teaching**

Humboldt's ideal of the co-existence of research and teaching has become a model for universities all over the world. Central to this model is the idea of research-oriented teaching and the transfer of knowledge from the spirit of research. Students and teachers join in an endeavour to critically examine traditional bodies of knowledge and to actively advance learning. Since 2012, HU Berlin has been the recipient of funding by the German federal and state governments for its Institutional Strategy "Bildung durch Wissenschaft. Educating Inquiring Minds: Individuality - Openness - Guidance". HU Berlin is part of the Berlin University Alliance and has been selected as one of the eleven German universities awarded the status of "University of Excellence".

#### **Charité – Universitätsmedizin Berlin (Medical School) (Charité)**

The Charité is one of the largest university hospitals in Europe. Here, 3,700 doctors and scientists heal, carry out research and teach at top international level. The Charité also has an international reputation for excellence in training. It extends over four campuses, with almost 100 clinics and institutes bundled under 17 Charité Centers. In 2010, the Charité was privileged in looking back and joyously celebrating its 300th anniversary.

#### **Freie Universität Berlin (FU Berlin)**

The FU Berlin is part of the Berlin University Alliance and has been selected as one of the eleven German universities awarded the status of "University of Excellence". Freie Universität can thus take its place as an "international network university" in the global competition among universities. Its future development strategy is focused around three strategic centres: cluster development, international cooperation and graduate studies. Development and assessment of research projects takes place within three major focus areas - area studies, humanities and life sciences.



### University location

Berlin is both the capital city of Germany and one of sixteen German federal states. Berlin is Germany's largest city, with 3.5 million inhabitants. The city spreads across 892 km<sup>2</sup> and is divided into twelve districts. Incorporated into the city area are numerous forests, parks and garden plots - a total of more than 2,500 public recreational and green spaces, making Berlin a green city.

Founded in the 13th century, Berlin has had an eventful history. Practically no other metropolis has experienced such frequent, radical change, which has transformed the face of the city. Although Berlin has seen a steady growth in its importance, dazzling epochs have alternated with darker eras. Nevertheless, the formerly divided city has succeeded in becoming a vibrant metropolis in the heart of Europe.

Berlin offers a large number of things to do in your spare time. For example, there are 52 theatres and stages, 153 museums and 279 cinemas. Several magazines detailing cultural events taking place in Berlin can help you decide what to do. Exberliner, for example, is an English-language paper for Berlin.

# Contact

## Technische Universität Berlin

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🌐 Course website: <https://www.bccn-berlin.de/phd-program-computational-neuroscience.html>

● [https://twitter.com/bccn\\_berlin](https://twitter.com/bccn_berlin)

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# International Programmes in Germany - Database

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## GATE-Germany

Consortium for International Higher Education Marketing  
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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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