



INTERNATIONAL PROGRAMMES

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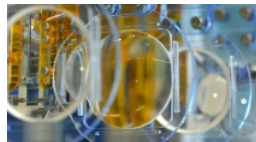
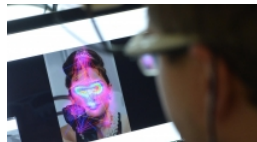
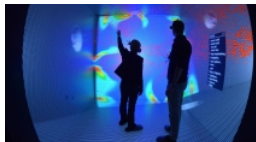
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Doctorate



Graduate School Simulation Technology (GS SimTech)

University of Stuttgart • Stuttgart



Overview

Degree	PhD
Doctoral degree or degree awarded by	University of Stuttgart
Teaching language	<ul style="list-style-type: none">• German• English
Languages	English about 60%, German about 40%
Programme duration	6 semesters
Beginning	Only for doctoral programmes: any time
Application deadline	No application deadline
Tuition fees per semester in EUR	Varied
Additional information on tuition fees	EU citizens do not pay tuition, whereas non-EU citizens pay a tuition of 1,500 EUR per semester.
Combined Master's degree / PhD programme	Yes
Joint degree / double degree programme	No
Description/content	<p>In the 21st century's societies, simulation technology is indispensable for the solution of complex problems in science and engineering as well as in medicine and social life. This has led to a broad variety of applications with enormous economic and scientific impact. Recent progress in modelling and simulation techniques, as well as in the design of hardware components, has raised the expectations in science and industry regarding the future of simulation tools. Simulation, as interaction with the real and virtual world, poses challenges which require simulation technology to advance to a new level. Contemporary strategies of isolated tools from different disciplines, theories and discretisation methods will be merged into a new class of integrated simulation environment supporting all aspects from models to interactive systems. This vision can only be</p>

achieved by crossing disciplinary boundaries within academia in order to develop a new quality in the interdisciplinary future-oriented field of simulation technology. To reach this goal, we want to increase the scientific understanding of the underlying processes and improve the modelling strategies in the various disciplines of natural sciences and engineering. At the same time, we plan to enhance the discretisation concepts and augment the numerical algorithms, the data management and the analysis and visualisation tools, while constantly improving the performance and the reliability of future simulation systems. Establishing integrative prediction methods and solutions for future challenges, we concentrate on methodical research areas ranging from molecular dynamics and advanced mechanics via computational mathematics and systems analysis to data management and interactive visualisation as well as to hybrid high-performance computing systems and simulation software engineering. An integrative platform ensures reflection and evaluation. Through the transfer of scientific results to application, we will further contribute to the economic benefit of our society.

Course Details

Course organisation

Aligned with the principles of the graduate schools granted by the DFG at German universities, the intention of the Graduate School Simulation Technology is to integrate doctoral students, along with their individual research projects, into the community of the Cluster of Excellence Simulation Technology to facilitate local exchange with the senior and junior professors and the research associates.

Owing to the multi-cultural background of the research associates and other participants, the teaching language is predominantly English. Interdisciplinary connectivity and quality control as well as international cooperation and exchange are basic principles of the school:

- The doctoral thesis is accompanied by two supervisors from different scientific fields within the cluster. An additional external or international examiner is mandatory.
- The doctoral students join lectures and seminars to study theories and methods in the field of simulation technology and to strengthen interdisciplinary exchange.
- A regular doctoral seminar will serve as a basis for the common scientific education, also guaranteeing a regular control of the individual scientific progress.
- As a further instrument for quality control, our doctoral students give a milestone presentation and write a milestone report after 18 months of doctoral studies.
- Quality assessment and control for the dissertation progress and scientific quality are closely interconnected to the internal quality control measures of the Cluster of Excellence Simulation Technology.
- In order to strengthen mobility and to integrate the research associates in international co-operations, the doctoral students go abroad for three months.
- The guest professors visiting the SimTech cluster will contribute to teaching in the graduate school. Furthermore, the visits open up opportunities for the young scientists of the school to discuss their ongoing research and to form networks.
- Non-scientific courses for personal development and career planning are offered.

International elements

- International guest lecturers
- Language training provided

Integrated internships

The educational programme does not include a mandatory internship during your doctoral studies. However, the Industrial Consortium SimTech e. V. (IC SimTech, a non-profit registered association) is the main platform for direct discussion of our SimTech researchers with experienced partners from the industry and providers of simulation tools. Most partners of the IC SimTech - large, international enterprises as well as medium-sized businesses - offer internships as an opportunity to gain experience in industry during our GS SimTech programme.

Course-specific, integrated German language courses

No

Course-specific, integrated

No

Costs / Funding

Tuition fees per semester in EUR	Varied
Additional information on tuition fees	EU citizens do not pay tuition, whereas non-EU citizens pay a tuition of 1,500 EUR per semester.
Semester contribution	Approx. 180 EUR per semester
Costs of living	Living expenses amount to about 750 EUR per month. You will have to demonstrate that you have sufficient finances to cover your living expenses for 12 months. EU citizens may apply for state guaranteed loans during the time of enrolment. For more information, see the links on our websites.
Funding opportunities within the university	Yes
Description of the above-mentioned funding opportunities within the university	Please check our website on financial aid and scholarships: https://www.uni-stuttgart.de/en/study/living-in-stuttgart/finances/index.html

Requirements / Registration

Academic Admission Requirements	<ul style="list-style-type: none"> • A university degree is mandatory. (A "Diplom" or Master's degree is required. In exceptional cases, a Bachelor's degree may be accepted.) • qualifying exam (if necessary)
Language requirements	English is mandatory. German is an advantage.
Application deadline	No application deadline
Submit application to	<p>SC SimTech Pfaffenwaldring 5a 70569 Stuttgart Germany</p> <p>E-mail: barbara.teutsch@simtech.uni-stuttgart.de</p>

Services

Possibility of finding part-time employment	Please be aware that it may be very challenging to finance your whole studies by working. Non-EU citizens are allowed by law to work for a maximum of 120 days per year. Only students who are employed by the university in one of the institutes or departments (Studentische/Wissenschaftliche
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Hilfskräfte) are exempt from this regulation, but other restrictions apply.

For more detailed information, please consult our websites:

[International Students: Financing your Studies](#) and [Working during your studies](#)

Accommodation	Both the campus in Stuttgart-Vaihingen and the campus in the centre of Stuttgart have on-site halls of residence. Dorm rooms (ranging from 240 to 350 EUR per month) are furnished. Some are equipped with a sink, and all have access to kitchen and sanitary facilities, telephone and Internet. From the campus in Stuttgart-Vaihingen, the city of Stuttgart can be reached by suburban railway within ten minutes.
Structured research and supervision	Yes
Research training / discussion	Yes

University of Stuttgart

Intelligent systems for a sustainable society

The University of Stuttgart is one of the leading technically oriented universities in Germany with global significance. Located centrally in an economically strong region with vast cultural integration, the university sees itself as a hub of university-based, extramural and industrial research. Furthermore, it takes a role as a leader in research-based teaching, focused on quality and holism. The university is dedicated to researching and strengthening the interfaces between technology, society and culture in an interdisciplinary manner, defined as the "Stuttgart Way". This means the integration of engineering, natural sciences, humanities and social sciences based on the fundamentals of cutting-edge research at a disciplinary level.

Excellent research and teaching

The University of Stuttgart implements innovative concepts in research and teaching in order to provide knowledge and strategies for a meaningful and sustainable development. It focuses on basic research that is both knowledge-oriented and application-related. To facilitate this research, the university is actively part of regional, national and international research networks.

The university is committed to the principle of unity between research and teaching. Students acquire knowledge, expertise and the power of judgement, in accordance with the guidelines of scientific research and awareness. The university fosters fascination for the sciences, supporting its students and junior researchers at all stages of their careers. It promotes independent thinking and provides an environment for responsible action. In doing so, it educates individuals into exceptional experts who think in an integrative and global manner and act responsibly in the sciences, economics and society.

A powerful region

Founded in 1829, at the beginning of the Industrial Age, the University of Stuttgart continues to prepare the way for innovation within an economically and scientifically powerful region and contributes to the economic success and prosperity of our society. This process combines the requirements of a social and cultural change, which allows an early and extensive input of social interests in research and design as well as teaching and further education.

Open-mindedness

The University of Stuttgart stands for open-mindedness, individuality and community spirit. It brings together students that are eager to learn, highly motivated employees, outstanding teachers, and excellent researchers as well as visionary thinkers and inventors. By means of its culture of integration, the university creates and conveys knowledge for shaping the future of our society.

University Location

The University of Stuttgart is nestled in one of Europe's most vibrant industrial regions. This fosters many forms of interdisciplinary collaboration – for instance, in numerous Collaborative Research Centres (also known as CRC or sometimes CRC/TRR) and in application-oriented research assignments. The University of Stuttgart sets up a close relationship and a successful transfer of knowledge and technology between its research institutions and business enterprises in the region and beyond. This very practical orientation benefits research and teaching. At the same time, economic players profit from rapid access to new scientific knowledge and contact to experts in their specialised fields. There are numerous possibilities of collaboration for businesses. Furthermore, the university also maintains a close relationship with non-university research institutions such as the Max Planck Society, the Fraunhofer Society, the German Aerospace Center and the German Literature Archive Marbach. Thus, the optimal prerequisites for cutting-edge research at the highest level are all to be found in Stuttgart.

Contact

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 Course website: <http://www.simtech.uni-stuttgart.de/en/gs/index.html>

 <https://www.facebook.com/Universitaet.Stuttgart>

 https://twitter.com/Uni_Stuttgart

 <https://www.youtube.com/user/UniStuttgartTV>

 <https://www.instagram.com/unistuttgart/>

Last update 19.10.2019 14:08:15

International Programmes in Germany - Database

www.daad.de/international-programmes

www.daad.de/sommerkurse

Editor

DAAD - Deutscher Akademischer Austauschdienst e.V.

German Academic Exchange Service

Section K23 – Information on Studying in Germany

(responsible: Judith Lesch)

Kennedyallee 50

D-53175 Bonn

www.daad.de

GATE-Germany

Consortium for International Higher Education Marketing

www.gate-germany.de

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".

The publication is funded by the German Federal Ministry of Education and Research and by contributions of the participating German institutions of higher education.



Federal Ministry
of Education
and Research