



Deutscher Akademischer Austauschdienst
German Academic Exchange Service



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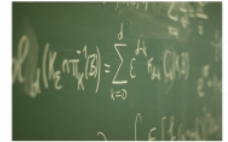
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Master's degree



Master's in Mathematics (MSc)

Karlsruhe Institute of Technology • Karlsruhe



Overview

Degree	Master of Science
Course location	Karlsruhe
Teaching language	<ul style="list-style-type: none">English
Languages	The programme is offered in English. Participants are also welcome to attend courses and seminars that are offered in German. They can choose to write the Master's thesis in English or in German.
Full-time / part-time	<ul style="list-style-type: none">full-time
Programme duration	4 semesters
Beginning	Winter and summer semester
Additional information on beginning, duration and mode of study	<p>The Master's in Mathematics programme is designed to be completed within two years, consisting of four semesters. In general, the courses are organised in the following manner:</p> <ul style="list-style-type: none">from the middle of October to the middle of February (15 weeks) for the winter semesterfrom the middle of April to end of July (14 weeks) for the summer semester <p>The students are welcome to attend mathematical as well as non-mathematical lectures/seminars in English or in German. On the learning platform ILIAS at KIT, the course materials may be uploaded by the responsible professors.</p>
Application deadline	<p>The application deadline is:</p> <ul style="list-style-type: none">15 July for the winter semester15 January for the summer semester. <p>It is strongly recommended that you do the following:</p> <ul style="list-style-type: none">Submit your application as early as possible, no later than one month before the deadline.Attach a cover letter for your application, explaining your motivation for applying and your competence in mathematics.

Tuition fees per semester in EUR	1,500 EUR
Additional information on tuition fees	Tuition fees apply only for international students from non-EU countries. For further information, please see: https://www.intl.kit.edu/istudies/9638.php .
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	<p>The Master's in Mathematics programme at KIT is research-oriented and has a strong focus on in-depth studies in a wide range of pure and applied mathematics subjects.</p> <ul style="list-style-type: none"> • Faculty members of the KIT Department of Mathematics are internationally recognised experts in Algebra and Geometry, Analysis and Differential Equations, Numerical Analysis and Partial Differential Equations, Scientific Computing, Inverse Problems, Computational and Data Sciences Computational Statistics, Stochastics, and Stochastic Processes in Finance, Actuarial Science and Engineering. • The students are also free to choose courses in some non-mathematics subjects such as Computer Science, Physics, Economics, Mechanical Engineering, Electrical Engineering. • Our students can also benefit greatly from a variety of programmes offered by the following research centres embedded in KIT: Collaborative Research Centre CRC1173: Wave Phenomena: analysis and numerics, KIT Center MathSEE: Mathematics in Sciences, Engineering, and Economics, Research Training Group RTG2229: Asymptotic Invariants and Limits of Groups and Spaces <p>Students studying in the Master's in Mathematics programme at KIT benefit from a flexible course composition in both pure and applied mathematics. Research and student seminars expose students to a wide range of topics and train them to critically read recent publications and present the material to the public. A required Master's thesis allows for students to immerse into real research and deeply learn one of the selected topics.</p>
Current information	Please visit the website of Master's programme in Mathematics at KIT: https://www.math.kit.edu/lehre/page/studinternational/en .

Course Details

Course organisation	<p>Generally speaking, 120 credit points (CP) are to be earned during the four semesters:</p> <ul style="list-style-type: none"> • During the first three semesters, students primarily attend lectures & seminars (90 CP) in the following fields, selecting subjects according to their interests: <ol style="list-style-type: none"> 1. pure mathematics, e.g. algebra, analysis, geometry 2. applied mathematics, e.g. partial differential equations, numerical analysis, stochastic processes, inverse problems, scientific computing 3. non-mathematical courses, e.g. computer science, physics, economics, mechanical engineering, electrical engineering • During the last semester, the students are expected to write a Master's thesis (30 CP) under the guidance of a faculty member in one selected topic. <p>For a detailed description of the study plan, study regulation and required credit points, please visit the "StudyPlan" website.</p>
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International elements	<ul style="list-style-type: none"> • International guest lecturers • Specialist literature in other languages • Language training provided • Projects with partners in Germany and abroad
Course-specific, integrated German language courses	No
Course-specific, integrated English language courses	No

Costs / Funding

Tuition fees per semester in EUR	1,500 EUR
Additional information on tuition fees	Tuition fees apply only for international students from non-EU countries. For further information, please see: https://www.intl.kit.edu/istudies/9638.php .
Semester contribution	180 EUR
Costs of living	Useful information concerning various aspects of living and learning in Karlsruhe (e.g. accommodation, jobs, mobility) can be found here: https://www.kit.edu/study/living-and-learning-in-karlsruhe.php .
Funding opportunities within the university	No

Requirements / Registration

Academic admission requirements	<ul style="list-style-type: none"> • Bachelor's degree in Mathematics corresponding to at least three years of study (or a minimum of 180 ECTS points) at a university, or a qualification equivalent to it (e.g. a Bachelor's degree in Physics or Computer Science with large mathematical content) • Knowledge in mathematics including but not limited to abstract and linear algebra, analysis, geometry, probability theory, and numerical methods
Language requirements	Applicants must prove their proficiency in English, at least at level B2 of the Common European Framework of Reference (CEFR). Proof is possible by TOEFL test results (with minimum score 90) or by an equivalent document.
Application deadline	<p>The application deadline is:</p> <ul style="list-style-type: none"> • 15 July for the winter semester • 15 January for the summer semester. <p>It is strongly recommended that you do the following:</p>

- Submit your application as **early** as possible, no later than one month before the deadline.
- Attach a **cover letter** for your application, explaining your motivation for applying and your competence in mathematics.

Submit application to

<https://bewerbung.studium.kit.edu/prod/campus/Portal/Start?l=en>

Services

Possibility of finding part-time employment

Please visit the job market website <https://www.careerserviceportal.kit.edu/en/jobboerse/>.

Accommodation

[Housing departement](#)

Support for international students and doctoral candidates

- Welcome event
- Specialist counselling

General services and support for international students and doctoral candidates

Support is provided by "Fachschaft", which is a student organisation –www.fsmi.uni-karlsruhe.de. Here you can receive help with your questions, which may concern exams, employment and events.

Very useful information (e.g. KIT accounts, Wi-Fi, libraries, websites, study plans) for international students is provided by "Fachschaft": https://o-phase.com/de/ss18/publications/IMaMa_Handbook.pdf.

Karlsruhe Institute of Technology



Mathematics building atrium

As "The Research University in the Helmholtz Association", **KIT** fully exploits its synergistic potential, which results from combining tasks of national research with those of a state university. To fulfil its three core tasks of **research**, **higher education**, and **innovation**, KIT is organised in five divisions: Biology, Chemistry, and Process Engineering; Informatics, Economics, and Society; Mechanical and Electrical

Engineering; Natural and Built Environment; and **Physics and Mathematics**. KIT has been successful in important rankings, for example, those of the Times Higher Education journal (THE).

KIT's research profile is determined by the disciplines pursued and by work on topics sharpening this profile. In response to society's demands, a particular focus is placed on energy, mobility, and information. Excellent young scientists are strategically recruited and supported. Eight KIT centres pool joint research activities across disciplines. These include the following: energy; information/systems/technologies; mobility systems; elementary particle and astroparticle physics; climate and environment; materials; **mathematics in sciences, engineering, and economics**; humans and technology.

KIT stands for a research-oriented and student-oriented teaching and learning culture. After having completed their studies, students are prepared for assuming responsible positions in a globalised world with densely networked media. Studies at KIT enable students to develop sustainable solutions with the help of scientific methods. Study programmes have an international orientation. KIT offers Bachelor's and Master's programmes in both German and English. Eleven KIT departments organise all higher education activities and academic affairs. These include the following: architecture, civil engineering, geosciences and environmental sciences, chemistry and biosciences, chemical and process engineering, electrical engineering and information technology, humanities and social sciences, informatics, mechanical engineering, **mathematics**, physics, as well as economics and management.

KIT understands the application of scientific findings as a basic principle. KIT's research and innovation activities are in line with the federal government's high-tech strategy and the continued Joint Initiative for Research and Innovation of Germany's federal and state governments and science organisations. This enhances the networking of good education, excellent fundamental research, and applied research in science and industry.



University location

KIT's south campus lies on the Kaiserstraße, the main street of Karlsruhe, and it borders on the Hardtwald Forest, a perfect place to take a leisurely stroll. The campus is almost 60 hectares large. The proximity to Alsace and the mild climate of the Rhine River gives the Baden metropolis an almost Mediterranean flair in the summer. Known worldwide is the fan-like ground plan the city has, thanks to the Margrave Karl Wilhelm von Baden-Durlach. Founded in 1715, Karlsruhe is the second-largest city in the federal state of Baden-Württemberg. It is also known as the "Residence of Justice", being the seat of Germany's two supreme courts (the Federal Constitutional Court and the Federal Supreme Court).

Karlsruhe lies in south-western Germany on the western edge of Baden-Württemberg, and it has about 300,000 residents. Located on the river Rhine, the city area borders on the federal state of Rhineland-Palatinate in the north-west and the country of France in the west. Well-connected big cities are:

- Paris (west of Karlsruhe), two hours and 40 minutes by rapid train
- Frankfurt Airport (north of Karlsruhe), one hour by rapid train
- Stuttgart (east of Karlsruhe), 53 minutes by local train
- Munich (east of Karlsruhe), two hours and 45 minutes by rapid train
- Zürich (south of Karlsruhe), two hours and 49 minutes by rapid train

In Karlsruhe, welcoming new citizens has a special significance and tradition. This is reflected by the fact that the "Bürgerstiftung Karlsruhe" rewrote the original "Privilegienbrief" (Charter of Rights), with which the city's founder attracted new inhabitants. It was rewritten as the "Karlsruher Bürgerbrief" in 2015.

Karlsruhe enjoys many diverse leisure, culture, and sports options, which offer something for everyone. The city boasts a wide variety of cultural attractions, including the Baden State Theatre, numerous private theatres, cinemas, museums, and art galleries. "Das Fest", one of Germany's largest open-air festivals, takes place in Karlsruhe once a year.

The local economy is based on a well-developed structure of medium-sized businesses, particularly in forward-reaching technologies such as computer science, multimedia, control systems, energy technology, and environmental science as well as nanotechnology. Several major companies, among them Bosch, Siemens, Daimler AG and Michelin, have production facilities in the region. Major research and development institutions (e.g. Fraunhofer Institute, Intel research campus) are part of the reason why the innovative potential of this city and region are well known worldwide.

Contact

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Mathematics

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🌐 Course website: <https://www.math.kit.edu/lehre/page/studinternational/en>

Last update 18.05.2025 03:16:00

International Programmes in Germany - Database

www.daad.de/international-programmes

www.daad.de/sommerkurse

Editor

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German Academic Exchange Service

Section K23 – Information on Studying in Germany

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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