

## Overview of the Degree Program

### ✓ Degree

Master of Science (M.Sc.)

### ✓ Regular Program Length

4 semester (full-time program)

### ✓ Credit Points (ECTS)

120 credit points

### ✓ Language of Instruction

English

### ✓ Admission Requirements

- » a completed bachelor's or equivalent degree in Physics or related discipline
- » necessary minimum requirements completed in the bachelor's program in
  - ▶ Theoretical Physics (Mechanics, Electrodynamics, Quantum Mechanics, Statistical Physics): 32 CP
  - ▶ Experimental Physics (Mechanics, Electrodynamics, Optics, Atomics, Molecular and Nuclear Physics, Structure of Matter (Solid State / Hadrons / Particles)): 32 CP
  - ▶ Physics Lab: 18 CP
- » proof of sufficient knowledge of English of at least CEFR B2 level (TOEFL, IELTS, TOEIC, Cambridge Certificate)

Details can be found in the current admission regulations.

### ✓ Limited Capacity

no

### ✓ Application Deadline

September 30 / March 31 for the 1st semester  
(for applicants with German or EU nationality)

July 15 / January 15 for the 1st semester  
(for all other international applicants)

## Questions?

If you have **general questions** about the degree program, studying at KIT or the **application process**:

Carmen Reck, your student advisor at ZSB:  
[carmen.reck@kit.edu](mailto:carmen.reck@kit.edu)

If you have **specific questions** concerning the curriculum of the degree program:

Your academic advisor at the KIT-Department of Physics:  
[academic-advisor@physik.kit.edu](mailto:academic-advisor@physik.kit.edu)

Information in this flyer was accurate at the time of printing. Program structure, study plan or deadlines could have changed since then.

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Physics

Master of Science

ZSB

Foto: KIT

# Karlsruhe Institute of Technology

The Karlsruhe Institute of Technology (KIT), a fusion of a university and a large-scale research facility, represents one of the leading research and teaching institutions in Europe in natural science and engineering. Students who choose to study here opt for a scientific education that is predominately research-oriented. The wide range of offered subjects provides a high level of freedom of choice and individual specialization options in the master's degree programs. The particularly high qualification standards at KIT are known among employers and thus offer graduates a well-paved road into starting a professional career or continuing with a doctorate.

## Physics (M.Sc.)

In the two-year master's degree program, you deepen and broaden the scientific qualification you already acquired in the bachelor's program and create your own profile. The language of instruction is English.

During the first two semesters, you can choose from a wide range of specialized lectures, both in theoretical and experimental physics, on research topics of the department, such as

- » Particle and Astroparticle Physics
- » Quantum Material and Systems
- » Condensed Matter
- » Optics and Photonics
- » Geophysics
- » Meteorology and Climate Physics

You are able to set your focus according to your personal interests. From the aforementioned spectrum of specializations, you will choose one first and one second major and one minor which you then will pursue with varying intensity.

In addition, you will complete an advanced physics laboratory course and a non-physics elective which you can choose from a vast selection of courses in natural sciences, engineering, computer science and economics.

You will then spend the remaining two semesters preparing and working on your master's thesis in a research group of your choice. In collaboration with your supervisor, you will work on an original problem in modern research.

We recommend, you start your studies in the winter semester. International applicants should apply as early as possible.

## Career Prospects

MSc graduates in Physics have a high level of employability and can choose from a wide spectrum of interesting and challenging fields of work:

- » stay in research and pursue a PhD, focusing on an academic career
- » research and development in automotive, aviation and aerospace industry and medical technology
- » data science and information technology
- » business and technology consulting
- » finance and insurance industry or patenting



## Characteristic Features of the Degree Program at KIT

- » choose your study plan according to your interests from an extraordinary broad range of scientific topics
- » major research topics: Particle and Astroparticle Physics, Quantum Materials and Systems, Optics and Photonics, Geophysics and Meteorology and Climate Physics
- » vast variety in the non-physics elective (courses in natural sciences, engineering, computer science or economics)
- » close connection of university education and research at large-scale facilities is unique in Germany
- » KIT is member of the university network EUCOR which enables you to participate in courses at the universities Freiburg, Basel, Strasbourg, Colmar and Mulhouse
- » possibility to join the German-French double-master's program
- » the department is easy to reach, located on the campus near the city center and the Karlsruhe palace
- » for future doctoral candidates: Karlsruhe House of Young Scientists (KHYS)

## Program Structure

1st semester	2nd semester	3rd semester	4th semester
<ul style="list-style-type: none"><li>• <b>Major (8 CP):</b> Choose 1 (experiment or theory) from<ul style="list-style-type: none"><li>• Particle &amp; Astroparticle Physics</li><li>• Quantum Materials &amp; Systems</li><li>• Optics &amp; Photonics</li></ul></li><li>• <b>Second Major (8 CP):</b> Choose 1 (experiment or theory) from Major or from<ul style="list-style-type: none"><li>• Geophysics</li><li>• Meteorology &amp; Climate Physics</li></ul></li><li>• <b>Minor (8 CP):</b> Choose from same subjects as Second Major</li><li>• <b>Advanced Physics Lab (6 CP)</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Major (12 CP):</b> continue choice from 1st semester</li><li>• <b>Second Major (6 CP):</b> continue choice from 1st semester</li><li>• <b>Non-Physics Elective Course (8 CP):</b> choose from natural sciences, engineering, computer science of economics</li><li>• <b>Interdisciplinary Qualifications (4 CP):</b> choose from a vast variety of soft skills such as scientific writing, presentation, time management or languages</li></ul>	<ul style="list-style-type: none"><li>• <b>Scientific Specialization (15 CP):</b> preparing your master thesis</li><li>• <b>Introduction to Scientific Methods (15 CP):</b> preparing your master thesis</li></ul>	<ul style="list-style-type: none"><li>• <b>Master thesis (30 CP):</b> your scientific work</li></ul>