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MSc in Water Science and Engineering • Karlsruhe Institute of Technology • Karlsruhe ......................... 2
Master's degree

MSc in Water Science and Engineering
Karlsruhe Institute of Technology • Karlsruhe

Overview

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<thead>
<tr>
<th>Degree</th>
<th>Master of Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching language</td>
<td>English</td>
</tr>
<tr>
<td>Languages</td>
<td>Courses are held in English and German. Graduating is possible with courses taught in English only. Your choice of possible electives increases if you can also follow classes taught in German. Participants can choose to write the Master's thesis in either language.</td>
</tr>
<tr>
<td>Programme duration</td>
<td>4 semesters</td>
</tr>
<tr>
<td>Beginning</td>
<td>Winter and summer semester</td>
</tr>
<tr>
<td>Application deadline</td>
<td>15 June for the following winter semester 15 December for the following summer semester</td>
</tr>
<tr>
<td>Tuition fees per semester in EUR</td>
<td>1,500</td>
</tr>
<tr>
<td>Additional information on tuition fees</td>
<td>Tuition fees apply only for international students from non-EU countries. Further exceptions apply: <a href="https://www.intl.kit.edu/istudies/9638.php">https://www.intl.kit.edu/istudies/9638.php</a></td>
</tr>
<tr>
<td>Combined Master's degree / PhD programme</td>
<td>No</td>
</tr>
<tr>
<td>Joint degree / double degree programme</td>
<td>No</td>
</tr>
<tr>
<td>Description/content</td>
<td>This advanced modular degree programme offers an interdisciplinary, research-oriented education at the interface between water-related engineering and natural sciences. Graduates extend their knowledge of scientific and engineering fundamentals from their undergraduate studies. They complement this in-depth knowledge with engineering and scientific methods. The MSc in Water Science and Engineering imparts expert knowledge in the following areas: • water technology and urban water management • hydraulic engineering and fluid mechanics • earth system science and water resources management</td>
</tr>
</tbody>
</table>
Topics include the efficient use of limited water resources, implementing increasing requirements for the protection of water bodies, handling of hydro-meteorological extreme events, and mitigating the impacts of global change on the water cycle and related material cycles.

Course Details

**Course organisation**

The Master’s degree programme in Water Science & Engineering is structured into the following subjects:

- Advanced Fundamentals
- Profile Studies
- Cross-Cutting Methods & Competencies
- Study Project
- Master’s Thesis

The subjects are individually shaped by the selection of modules within the given options. Each module consists of one or more related lectures, seminars, and/or labs, and is completed by taking one or more exams. The scope of each module is given by credit points (CP) that are credited when the module is successfully completed.

- Advanced Fundamentals (27 CP): In this subject, advanced fundamentals of water-related engineering and sciences are taught in lectures and labs. All students attend a lecture series on modelling water and environmental systems. They further choose four subject-specific modules according to their fields of interest and their selected specialisation.

- Profile Studies (36 CP): The degree programme provides opportunity for specialisation within three areas of expertise in the sectoral profiles A-C. In addition, an education of generalists in water engineering is possible in the cross-sectoral profile D.
  - Profile A: Water Technologies & Urban Water Cycle: Innovative technologies for the treatment of drinking water and wastewater; sustainable design of urban and decentralised water systems; biological, chemical and physical processes of water treatment; planning and dimensioning of infrastructure and facilities for water supply and wastewater disposal
  - Profile B: Fluid Mechanics & Hydraulic Engineering: Advanced hydrodynamic principles, and their application for flows in the environment as well as for planning and dimensioning of hydraulic structures for water management; substantiated education in physical and numerical modelling
  - Profile C: Environmental System Dynamics & Management: Processes of the water cycle in terrestrial systems and related matter and energy cycles; integrated management of river basins; protection of surface and ground waters; prediction of water-related extreme events; development of prevention and mitigation measures.
  - Profile D: Water Resources Engineering: This profile aims at training generalists as the individual specialisation. Consequently, it features a diversification into the topics of the three profiles A-C.

- Cross-Cutting Methods & Competencies (12 CP): The scientific education is complemented by a comprehensive education in methods and technical skills.

- Study Project (15 CP): Students carry out an interdisciplinary study project, which prepares them for independent scientific working and writing, and introduces skills in project management and in combining approaches from different fields.

- Master’s Thesis (30 CP): Students apply the acquired knowledge and methodology to independently plan and conduct a scientific study at the end of the programme. They are able to deal with the current state of research, and they are capable to work theoretically and/or experimentally on a complex problem according to scientific standards.

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| A Diploma supplement will be issued | Yes |
Course-specific, integrated German language courses: No
Course-specific, integrated English language courses: No

Costs / Funding

<table>
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</tr>
<tr>
<td>Semester contribution</td>
<td>155 EUR</td>
</tr>
<tr>
<td>Funding opportunities within the university</td>
<td>No</td>
</tr>
</tbody>
</table>

Requirements / Registration

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Academic admission requirements</td>
<td>Bachelor's degree (or equivalent) in engineering (civil or environmental engineering, chemical or biological engineering, mechanical engineering), science (geoeconomy, environmental sciences, geosciences), or in a related topic (degree programme with a minimum regular duration of three years and a scope of 180 ECTS points)</td>
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<tr>
<td></td>
<td>Applicants need to demonstrate by their transcript of records a proficiency level with a scope of at least 12 ECTS points in higher mathematics, in fundamental science or engineering (physics/mechanics/chemistry/biology/thermodynamics, etc.), and in engineering or sciences such as water management, hydraulic engineering, water treatment, hydrology, hydrogeology, or hydrometeorology.</td>
</tr>
<tr>
<td>Language requirements</td>
<td>Applicants must provide proof of their English skills: TOEFL 90 (Internet-based), IELTS 6.5, or equivalent.</td>
</tr>
</tbody>
</table>
| Application deadline                              | 15 June for the following winter semester  
15 December for the following summer semester |
| Submit application to                             | Karlsruher Institut für Technologie  
International Students Office  
Adenauerring 2  
76131 Karlsruhe  
Germany |

Services
Possibility of finding part-time employment

International students have the possibility to work part-time during their studies at KIT. Local industry and businesses are constantly looking for temporary staff. Also, at KIT there are various positions available as student assistants.

However, students should check with the authorities to see if they are allowed to work and to what extent they may work. They should also be aware that taxes and social contribution fees may apply.

Accommodation

Rent for a single room in a student residence is approx. 250 EUR per month. Private rooms are more expensive (approx. 300 EUR).

The International Students Office offers support in finding accommodation for newly enrolled international students. It works closely together with the Student Union Karlsruhe that manages the student residences in Karlsruhe. The International Students Office can also help students to find private accommodation.

However, students should keep in mind that there is a general shortage of housing in Karlsruhe. They should start looking at an early stage, especially if starting their studies in the winter semester.

http://www.intl.kit.edu/istudies/3364.php

Contact

Karlsruhe Institute of Technology
Department of Civil Engineering, Geo and Environmental Sciences

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76131 Karlsruhe

✉️ watscieng@bgu.kit.edu

Course website: http://www.wasser.kit.edu/english/msc_watscieng.php

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