Resources Engineering – a water-oriented Master Study Programme

**Institution**
Karlsruher Institut für Technologie (KIT)  
(Karlsruhe Institute of Technology (KIT))  
The Karlsruhe Institute of Technology (KIT) was founded on October 01, 2009, by a merger of Universität Karlsruhe (TH) and Forschungszentrum Karlsruhe. KIT bundles the missions of both precursor institutions: a university of the state of Baden-Württemberg with research and higher education tasks and a large-scale research institution of the national Helmholtz Association conducting provident programme-oriented research on behalf of the government. Within this joint mission, KIT is operating along three strategic fields of action: research, higher education, and innovation.

**Location**
The city of Karlsruhe was founded in 1715. Today, it has about 290,000 inhabitants. It is located in the West of the State of Baden-Württemberg in the Upper Rhine Valley bordering the Black Forest and the Vosges Mountains. The “Technology Region” Karlsruhe (Technologie Region Karlsruhe) has the highest number of researchers per capita in Europe.

**Course focus**
The accredited water-oriented Master Study Programme “Resources Engineering” at the Department of Civil Engineering, Geo- and Environmental Sciences (BGU Dept.) provides a forum for multidisciplinary academic studies aimed at graduating students who will engage in water stewardship around the globe. We expect graduates to take leadership positions in basic water resources research and in applied fields such as integrated river basin management, water supply management, sanitation engineering, or hydropower engineering.

The study promotes knowledge and competencies essential for contributing to integrated water management projects. The curriculum features components in applied natural sciences, engineering, and socio-economics for advanced technology as well as for technology appropriate for development cooperation. Students will learn to apply the scientific knowledge acquired for handling the natural resource water. The study will enable students to evaluate the optimal field of application and the efficiency of solutions to complex problems in research and society.

**Curriculum:**
To be awarded the M.Sc. in “Resources Engineering”, students have to complete a minimum of 120 CP acc. to ECTS in four semesters (of six months each): (details at www.bgu.kit.edu/resources-engineering/english)  
90 CP for course modules (lectures, seminars, lab courses)  
60 CP compulsory disciplinary modules  
15 CP compulsory supplementary programme  
15 CP compulsory elective modules  
30 CP for the module “Master’s thesis“  
(written thesis and colloquium)

**Compulsory disciplinary modules (60 CP; 7 modules).** The compulsory disciplinary lecture courses cover three semesters.

**Compulsory supplementary programme “International Projects” (Begleitstudium, 15 CP; 3 modules).** The supplementary programme shall ensure competencies that are indispensable for contributing to international team projects. Relevant competencies will be taught at a professional level, e.g., language proficiency and the ability to successfully complete team projects in variant cultural contexts. Completing Module 8 “International Communication” includes passing the German language proficiency test either at level DSH 1 or TestDaF 3. Completion of Module 8 by the end of the first semester is a prerequisite for admission to module examinations of the second semester of “Resources Engineering” and, thus, for the continuation of the DAAD scholarship as well.

**Compulsory elective modules (15 CP; 3 modules).** In the second and third semester students will choose compulsory elective modules for their individual specialisation. Students may also choose additional modules for further specialisation.

**Master thesis (30 CP).** During the fourth semester, students will write a thesis to demonstrate their ability to analyse environmental system sectors as well as socio-technical systems and to define an appropriate approach for a solution to a given problem.
Target group
Graduates of Bachelor study programmes or of an equivalent study programme with a
standard study period of three years who have earned at least 180 CP acc. to ECTS
in a disciplinary sector of the Department of Civil Engineering, Geo- and
Environmental Sciences at KIT; and
Graduates of Bachelor study programmes in subjects not offered at the Department of
Civil Engineering, Geo- and Environmental Sciences at KIT – provided they earned
above average grades in subjects in civil engineering, geo- and environmental
sciences.

Course language
English and German
Compulsory lecture courses are offered in English, whereas most compulsory elective
lecture courses are offered in German. Hence students will register for compulsory
elective lecture courses stepwise as their German language proficiency improves.

Entry requirements
above-average Bachelor’s degree: B.Sc. or B.Eng.
above-average grades in subjects of civil engineering, geo- and environmental sciences
ENGLISH: TOEFL test (88 internet based)/ IELTS certificate (6.5)
GERMAN:
July 15: level B1 acc. to CEFR
1 year prior: at least level A2 acc. to CEFR (DAAD applicants)
at least 2 years of professional experience (DAAD applicants)

Degree awarded
Master of Science (M.Sc.)

Course begins
Refer to the website www.bgu.kit.edu/resources-engineering/english

Course duration
4 semesters
Sem. 1–3: 18 months lectures, seminars, labs, excursions
Sem. 4: 6 months (master thesis, colloquium)

German language
courses
During the 1st semester (for all students):
full-term course starting at base level B1 aiming at DSH 1 *
(mandatory for all students who have not yet passed the DSH 1 and whose native
language is not German); partial module exam.
Preparatory courses for DAAD students:
(a) DUO online (January-March; from level A2.1 to level A2.2/B1)
(b) at KIT (June-Sept, 20 h/wk; from level A2.2/B1 to level B1/B2).

Application
deadlines
Applications must be submitted in English. All applicants, including applicants for
scholarships, are required to submit the programme-specific application form.
(Download at www.bgu.kit.edu/resources-engineering/english).
For DAAD scholarships (1 year prior to the intended start of study):
30 September at the Karlsruhe Institute of Technology (KIT)
(Resources Engineering Office; address s. below).
For other scholarships:
Inquire with the respective scholarship organisation.
For self-financing students (in the year of the intended start of study):
15 July at the Karlsruhe Institute of Technology (KIT)
(Resources Engineering-Office; address s. below).

Remarks
German Course DB210 EUR 180 (once, 1st semester)
DSH examination EUR 110 (once, 1st semester)

For further
information contact
Resources Engineering-Office
Karlsruhe Institute of Technology (KIT), Campus South,
Department of Civil Engineering, Geo- and Environmental Sciences
Otto-Ammann-Platz 1, Bldg. 10.81, R 312
76131 Karlsruhe, Germany
Email: res.eng@bgu.kit.edu
Web site: www.bgu.kit.edu/resources-engineering/english

Status: December 2013