

How to apply

Admission

For admission you need a Bachelor degree from the wide field of geo-related study courses, with 6 credit points in a higher programming language as well as GIS.

Study fees of 1,500 € per semester apply to overseas students (i.e. students from outside the EU).

Application deadline:

(start in October)

15 May for students from outside the EU

15 July for EU students

(start in March)

15 November for students from outside the EU

15 January for EU students

Application portal:

https://www.eit.hs-karlsruhe.de/Web_Online_App

The program leads to a Master of Science (M.Sc.) degree.

Laboratories and Research Projects

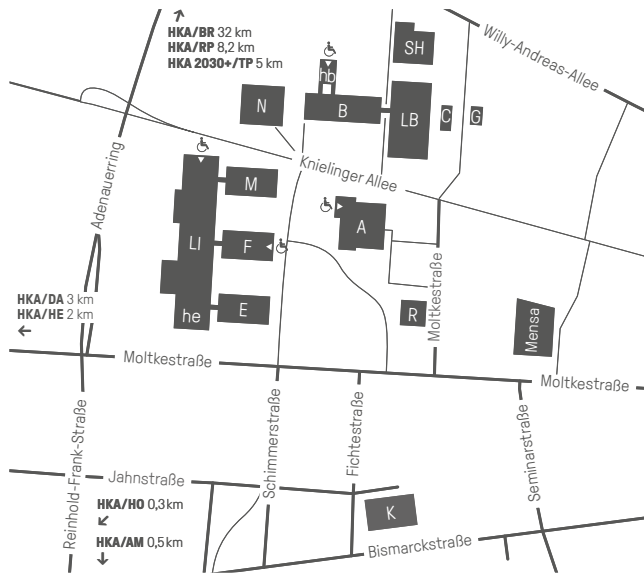
Laboratory work and the inclusion of sophisticated research and development projects (RaD) are regarded as essential characteristics and components of the Master program Geomatics. Graduates are thus well versed in science- and research-oriented academic education, while meeting at the same time the requirements of professional skills requested by industry. The existing laboratories are:



- + Laboratory for GI and Digital Image Processing
- + ESRI Development Center (EDC)
- + Laboratory for Photogrammetry and Remote Sensing
- + Laboratory for Measuring Technology
- + Laboratory for GNSS and Navigation



Further information :
www.h-ka.de/en/gmc



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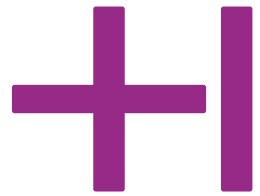
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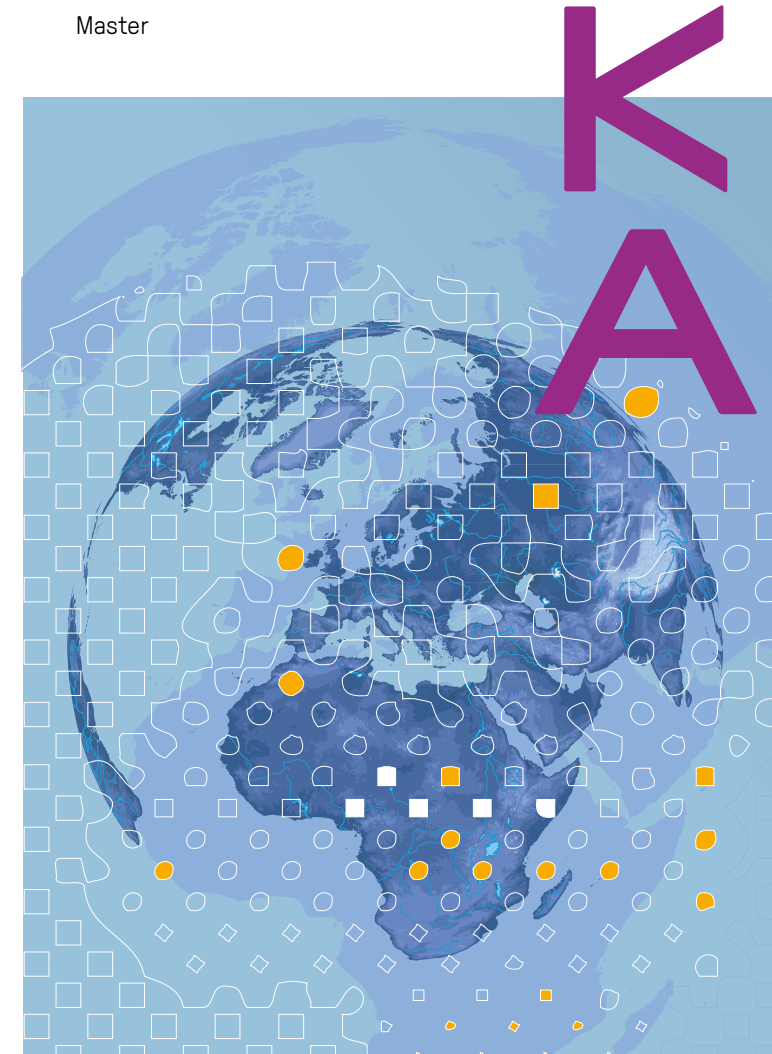
Hochschule Karlsruhe
University of
Applied Sciences

Fakultät für
Informationsmanagement
und Medien



Geomatics

Master



The Master Program

Geomatics is a modern, self-contained geo-information, geoscience, engineering, and ICT-related discipline. It deals with the acquisition, processing, modelling, analysis, and visualization of spatially referenced data. This concerns the geometry as well as physical and socioeconomic features of our Earth, spatial information infrastructures of the built and natural environment, and the simulation of geospatial processes. The data originates from many different sources, including satellites, air and seaborne sensors, ground-based measurements, surveys and statistics, and maps. Today's techniques make extensive use of GNSS, often involving the crowd.

The data is processed with state-of-the-art information and communication technologies (ICT), often in geographical information systems (GIS) and based on a broad spectrum of mathematical algorithms and models. Thus, Geomatics plays an important role in products and services, which depend on geospatial data and spatial computing. Nowadays it has an impact on numerous disciplines including environmental management, land development and planning, engineering, geo- and life sciences, traffic, logistics, and utilities.



Due to the high demand for qualified Geomatics engineers the M.Sc. graduates are guaranteed a wide choice of rewarding careers at national and international levels in private industry as well as at governmental or scientific institutions. In Germany, the M.Sc. graduates can pursue a career in the higher civil service (Höherer Verwaltungsdienst). The M.Sc. degree also qualifies for PhD programs. At Karlsruhe University of Applied Sciences, PhD studies can be carried out in cooperation with different German and foreign partner universities.

Study Content



The international study program Geomatics (M.Sc.) comprises 90 ECTS in 3 semesters with generally 5 modules and 30 ECTS per semester. The 1st and 2nd semester cover compulsory and elective modules, where 4 electives have to be selected among 6, while the 3rd semester is for the preparation of the Master Thesis. Due to the independence of the modules in the 1st and 2nd semester the program can be started in March or October.

Fulltime and part-time program:

The study program is offered as full-time and part-time program. By studying part-time, courses and Master Thesis have to be completed within 6 semesters. The compulsory and elective modules have been distributed from the 1st to the 4th semester. The 5th and 6th semester is for the Master Thesis.

Winter semester	Compulsory Modules: Opensource GIS, Software Engineering, Soft skills (Language and Academic Writing) Elective Modules (2 from 3) Big Data Analytics, Geovisual Analytics, Navigation
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Summer semester	Compulsory Modules BIM & VR/AR, WebServices & Monitoring, Satellite Image Analysis Elective Modules (2 from 3) Spatial Data Science, Mobile Apps GIS, Geodesy
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3. semester Master Thesis

Target Group

The internationally oriented program is unique in combining the study of geo-information management/cartography and geodesy with a focus on the following six fields:

- + Big Data: Principles and algorithms from data science and big data to detect patterns and solve problems efficiently in terms of time and memory;
- + Environment: Monitoring and managing our changing natural environment by means of GIS and remote sensing;
- + Geodesy: Engineering photogrammetry and geodesy for automated information extraction; BIM (Building information modelling);
- + Geoinformatics: Application programming for Web Processing Services/Monitoring and Open Source GIS;
- + Geovisualization: Computer-aided geovisualization; Mobile apps development; VR/AR-applications;
- + Navigation: GNSS/MEMS/Optical sensors integrated precise navigation for smartphones, ground/water/airborne vehicles, intelligent robotic systems, mobile mapping.

The Master program in Geomatics (M.Sc.) started in 2001 and exists with an experience of 20 years in training students from all over the world. Although graduates of diverse backgrounds are accommodated within one joint program, the choice of elective modules allows for following individual interests in the fields of geomatics, and thus for a specialization.

The international Geomatics program is also offered in cooperation with the Universidad Politécnica de Valencia (UPV) as a double-degree M.Sc. program. Students have the opportunity to spend one year at HKA (Germany) and one year at UPV (Spain) and receive Master degrees from both universities. Furthermore some courses or the Master thesis can be completed e.g. in the UK (Edinburgh), South Africa (Pretoria), Greece (Thessaloniki) or the USA (Mankato).

