

Geomatics Engineering Master of Science Program

Overview

Geomatics Engineering (GEOENGINE) is the key discipline for measuring, modelling and presentation of geospatial data and processes. Recent technological developments such as global satellite navigation, autonomous navigation, driver assistance systems, digital maps and virtual globes have enhanced geodesy and geoinformatics in the public awareness.

GEOENGINE meets societal demands for geospatial infrastructures for sustainable development and responsible use of available resources.

Objectives

GEOENGINE has been designed as a compact Master of Science program for international students from academia, government agencies or geomatics engineering companies. It provides advanced education and practical training to those students who wish to widen their perspective and expand their knowledge on numerical techniques for acquiring and modelling geospatial data. Successful completion of the curriculum enables them to create and manage intelligent workflows and services. Based on deep theoretical understanding, sophisticated technology and methods can be flexibly adapted to the necessities of specific applications.

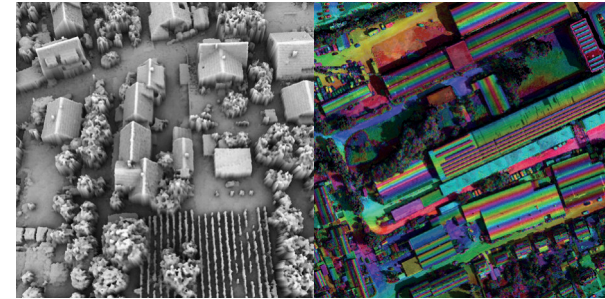


Competences

Geomatics Engineers are professionals for advanced technologies for geospatial data acquisition and management. They are indispensable partners in urban planning, traffic management and sustainable economic development. Therefore, the GEOENGINE Master program provides profound knowledge focused on positioning, navigation and telematics.

As future executives in industry and research, graduates of this master program will also be proficient in the following:

- Mastering state-of-the-art technology
- Acquisition, administration and processing of geodata
- Team management
- Research in all fields of Geomatics Engineering



1st semester (30 ECTS)
Advanced Mathematics
Statistical Inference
Signal Processing
Monitoring
German as a Foreign Language
Map Projections & Geodetic Coordinate Systems

2nd semester (30 ECTS)
Dynamic System Estimation
Kinematic Measurement Systems
Physical Geodesy
Remote Sensing
Airborne Data Acquisition
Integrated Fieldwork

Curriculum

The international program is comprised of solid theoretical foundations in mathematics, theoretical and satellite geodesy and geo-methodologies, in addition to applied subjects such as the representation of geodata, positioning, navigation, multisensory integration and geotelematics. The two-year program consists of three coursebased semesters and one semester dedicated to thesis research.

The courses are organized in modules. Most of them are mandatory, while two modules are electives. Also, a two-week practical field work as well as a compact German language precourse are mandatory. All modules are credited according to the European Credit Point System (ETCS). The language of instruction is English.

The program is fully accredited according to the European Standards and Guidelines for Quality Assurance in the European Higher Education Area.



3rd semester (30 ECTS)
Information and Contract Law
Geoinformatics
Thematic Cartography
Electives (2 out of 4) <ul style="list-style-type: none"> • Satellite Geodesy • Navigation • Computer Vision and Pattern Recognition • Multisensor Integration in Geodesy and Transport

4th semester (30 ECTS)
Master Thesis

Application

The GEOENGINE program starts every year in early September. Application deadline is March 15 (date of exclusion) of the same year. Since the number of students is limited, there will be a competitive selection procedure in addition to the admission requirements.

All relevant information on application is available from the GEOENGINE program homepage.

All materials must be submitted to the GEOENGINE office at University of Stuttgart prior to the application deadline.

Admission

Entering GEOENGINE requires a qualifying Bachelor degree in Geomatics Engineering or equivalent.

Admission requires a sound mathematical background, knowledge in geomatics as well as basics in computer programming.

If you are not a native English speaker a proof of your proficiency in English is required, which can be demonstrated, e.g., by a minimum TOEFL iBT score of 80 points or any other equivalent proof. Applicants with English as medium of instruction during their Bachelor education are exempted from this requirement.



Contact information at a glance

GEOENGINE

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Impressum

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Financial Aspects

The University of Stuttgart is a public university. Non European students have to pay tuition fees of EUR 1500 per semester plus a service and enrolment fee amounting to about EUR 170 per semester. In general, students will need approximately EUR 850 per month for living expenses, including housing, meals, public transport and health insurance. GEOENGINE is a full time master program and thus requires a secure financial foundation over the whole study period. Applicants are expected to guarantee this supply of financial resources.

Housing and Living

Several student dormitories are available in convenient reach to the University campus. They provide furnished single bedrooms with shared bathroom and kitchen facilities. The limited amount of rooms will be assigned on a first-come first-serve basis. Upon receipt of your application, details on room reservation and further arrangements of your stay in Stuttgart are provided.

Office of International Affairs

The Office of International Affairs at University of Stuttgart provides information and advice for international students on general questions and issues of studying and living in Stuttgart. It is also responsible for the “Welcoming Service”, including individual mentoring programs, intercultural training and German language courses. Social programs and weekend tours are organized by the Office of International Affairs for foreign students throughout the program.



University of Stuttgart

The University of Stuttgart is located in Baden-Württemberg, the south-western region of Germany. Its history dates back to 1829. The University of Stuttgart hosts about 22000 students, where more than 20% are from international countries. It is one of the oldest technical universities and has been repeatedly ranked among the top universities in Germany. The university hosts 10 faculties, several centres of excellence, various technology transfer centres, graduate research programs and a federal supercomputing centre. Many large research centres have strong connections to the University of Stuttgart. Therefore, it is a truly future oriented place of research and advanced education and a beneficial network for the execution of internships and theses. The Geomatics department at the University of Stuttgart is part of the faculty “Aerospace Engineering and Geodesy”. It consists of four institutes, dedicated to Navigation, Photogrammetry, Physical Geodesy and Engineering Geodesy. This leads to an optimal coverage of the different disciplines in respect to.

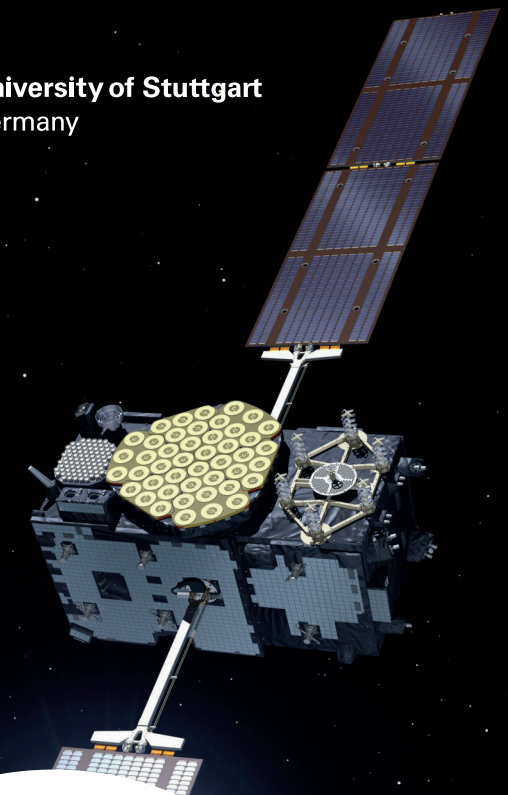
The city of Stuttgart

Stuttgart is the state capital of Baden-Württemberg. It has a population of about 600000 inhabitants. Situated in the valley of the Neckar river, between the hills of the Swabian Alb and the Black Forest, it is often called “the city between forests and vineyards”. A large number of cultural highlights are to be found in the city including opera, ballet, theatres, concert and music halls, art galleries and various famous museums. There is also a rich variety of sports events as well as many possibilities for individual activities such as mountain biking and hiking. Due to Stuttgart’s central location, it is easy to visit neighbouring countries like France, Switzerland, Italy, Austria, Czech Republic, Belgium and the Netherlands.

The Stuttgart region is one of the most attractive regions in Germany. It is well known for its high-tech industries such as car manufacturing, environmental technologies, machining tools, electronics and information and communication technology. Many internationally renowned companies such as Daimler, Porsche, Bosch, HP and IBM Germany are located in the Stuttgart region. In addition, numerous smaller and medium sized technology-oriented companies are making their mark on.



University of Stuttgart
Germany



GEOENGINE
Geomatics Engineering

International Master of Science
Program

www.geoengine.uni-stuttgart.de