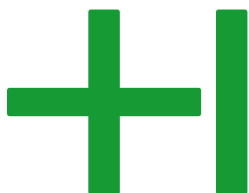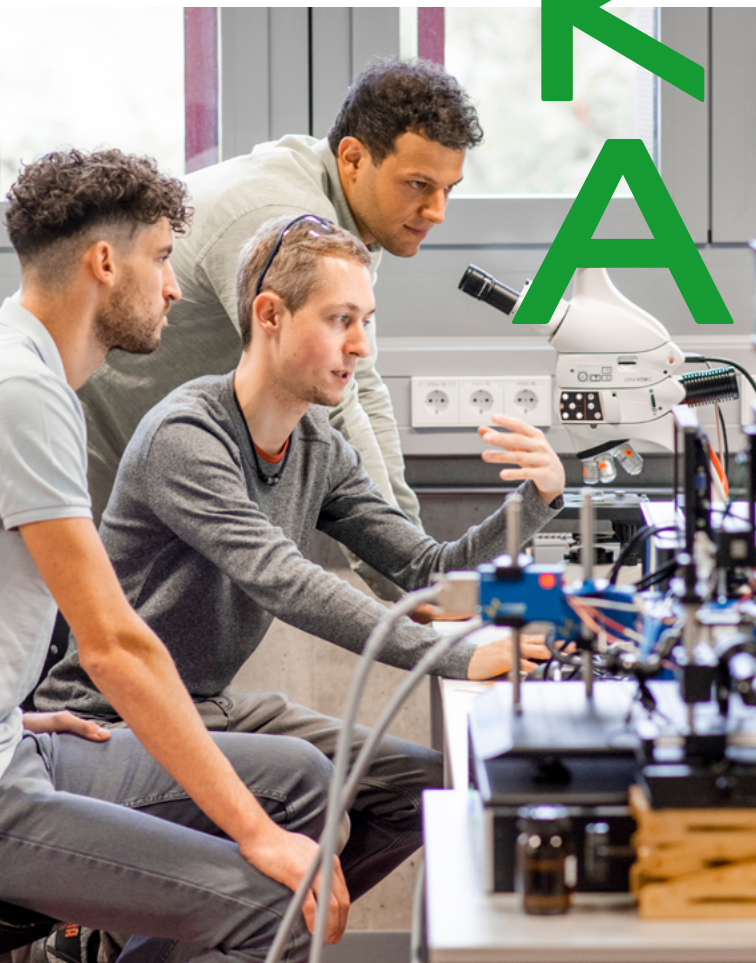**Hochschule Karlsruhe**
University of
Applied Sciences

Fakultät für
**Elektro- und
Informationstechnik**

Sensor Systems Technology

Master

Sensor Systems Technology

In many machines and daily life applications sensors play an increasing role. Sensorics therefore is seen as one of the most innovative branches of technology with a very promising future. Traditionally sensors and actuators are applied in process and production technology, but there is also an increasing demand in automotive as well as medicine and environment technology applications. Nowadays there is not only a need for reading recorders, but increasingly integrated sensors with their own intelligence (micro processors) are demanded.

Who is the program aimed at?

If you have a very good bachelor's degree in electronics, instrumentation, controlling, automation technology with a very good basic knowledge of natural sciences, you can get started in the Master's program in Sensor Systems Technology. The topics and projects as well as the research areas are treated on a very high teaching level.

Study Contents

The study programme covers physical, biological, optical and chemical sensors and their applications as well as control, bus systems, programming, micro controllers, pattern recognition and signal processing. German students are expected to do their final thesis project in a foreign country whereas foreign students do their thesis in Germany.

The students acquire skills in working in international teams and are best prepared for a job with a „global player". Students may choose two of the following major subjects: environmental sensorics, medical sensorics, microsystems/hybrid technology and advanced programming.

Study Contents

Semester 1	Advanced Physics, Analog Signal Processing, Digital Signal Processing, Advanced Chemistry, Management
Semester 2	Sensors A, Sensor Actor Networks, Realtime Data Processing, Focal Subjects A (Module Focal Subjects), Language A (Module Language), Project A (Module Projects)
Semester 3	Sensors B, Automotive Sensors Applications, System Integration, Focal Subjects B (Module Focal Subjects), Language B (Module Language), Project B (Module Projects)
Semester 4	Bachelor Thesis, Final Presentation

Application-oriented Studies

The Hochschule Karlsruhe – a university of applied sciences (HKA) – offers small class sizes. This allows close contact and interactions with all professors and the teaching personnel. There are also close links and cooperation projects with local and global industry partners

Research Facilities
The department is characterized by a strong connection between research and education. The research activities are concentrated at the Institute of Sensorics and Information Systems (ISIS) and the Institute for Optofluidics and Nanophotonics (IONAS)
Please see webpages at:
www.hs-karlsruhe.de/isis
www.hs-karlsruhe.de/ionas

Many applied research projects:
+ Sensor materials for field analysis applications
+ Gas sensorics and control of fire-wood-fueled fireplaces
+ Development of Vacuum Insulation Panels (VIP)
+ Medical sensorics and medical imaging systems
+ Engineering software techniques and security bus systems
+ Hybrid integrated capacitive humidity sensors
+ Optofluidic and Nanophotonic
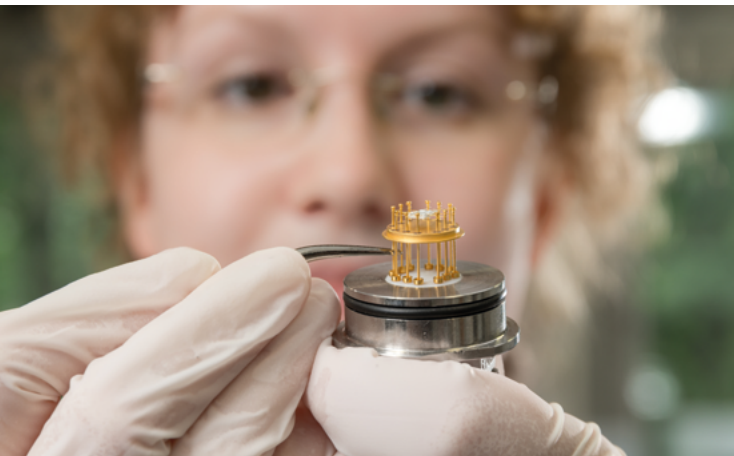
Your Benefits At A Glance

+ Master of Science degree programme - allows to continue with PhD studies

+ Accredited as research oriented by ASIIN since 2005 - with the seal of the German Accreditation Council

+ Course covers four semesters = 2 years = 120 ECTS credit points

+ 100 % English as language of instruction

+ Course starts each year in March

+ German language and culture courses are included in the curriculum. No German language skills are required to start the programme.

+ Small classes of 25 students maximum

+ Direct contact with professors and staff

+ Many laboratories to support and explain the theoretical background of the topics

+ Interactive lectures with a lot of experiments

+ All professors have experience in industry

+ Strong connections with local and global industry partners

+ Strong research activities in the department provide interesting research topics for projects

+ Interesting international community with students from many different countries

+ Dual degree programme with VIT University in Vellore / Tamil Nadu / India

Technology Tower – The symbolic academic structure of the Vellore Institute of Technology (VIT).

International Studies

Dual Degree Programme with VIT / India

In 2008 a dual degree programme was established with our partner, VIT University in Vellore / Tamil Nadu / India. Students taking part in this dual degree programme spend their first year at their home university and change to the partner university for the complete second year, including the final thesis project and final exams. Students pay fees to their home universities only during the whole programme. After completion of the programme the students receive degrees from both universities.

More informations here:
www.h-ka.de/sstm

How To Apply

Your application will be evaluated ba an admission committee. They will look at your marks in profile subjects as: physics, chemistry, electronics, computer science, mathematics, control engineering, microprocessors and some sensorics related subject. They also will look at any information like GRE results, cv details, projects, recommendations, ...
This will result in a ranking number for admission. The highest numbers (above a minimum threshold) will be accepted.
The course should have 25 students each year.

There are fees for all non-EU citizens according to state law of the state of Baden-Württemberg. This is valid for all universities in this state. EU citizens have no fees. The fees are 1500 € per semester.

Application Details
Please apply via the online platform and upload the application documents. Paper version may be submitted later.

For a successful application submission you need:
+ Please register via → online platform
+ CV (curriculum vitae).
+ Bachelor's certificate (may be submitted later).
+ Transcript of records (necessary immediately, all universities you studied at).
+ English language certificate (TOEFL, IELTS, ... ,
+ Secondary school certificates.
+ Copy of Passport
+ We strongly recommend to send GRE test and, for students from India, additional GATE test, if available.
+ Optionally, you can submit: statement of purpose, recommendation letter(s) by your professors/employers.

We cannot send back the application papers. Do not send original documents. But when you get admission, you have to show the original documents. If there is something incorrect, your admission is canceled.

In case of problems or further questions please contact → Mrs Silke Neureuther or the → head of the programme by email.

Application deadlines for following summer semester
November 15 for Non-EU-applicants
January 15 for EU-applicants
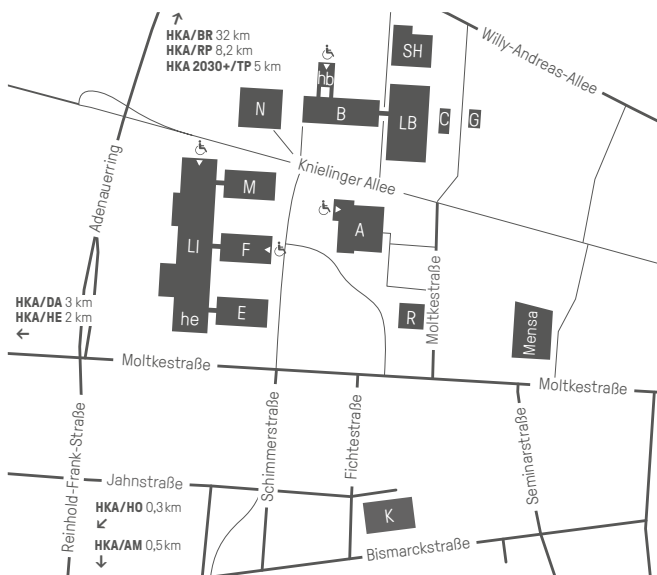
Hochschule Karlsruhe
University of Applied Sciences
Moltkestraße 30
76133 Karlsruhe
Tel.: +49 (0)721 925-0
Fax: +49 (0)721 925-2000
mailbox@h-ka.de
www.h-ka.de

Electrical Engineering and Information Technology, Office
Building N, Room 108
Tel.: +49 (0)721 925-1300
sonja.maier@h-ka.de
www.h-ka.de/sstm

Dean of Studies: Prof. Dr.rer.nat. Thorsten Leize
Tel.: +49 (0)721 925-1373
thorsten.leize@h-ka.de

Student Registry
Tel.: +49 (0)721 925-1092
studieninfo@h-ka.de

Service Center for Teaching and Learning
Tel.: +49 (0)721 925-1071
studienberatung@h-ka.de