

## Career and application fields

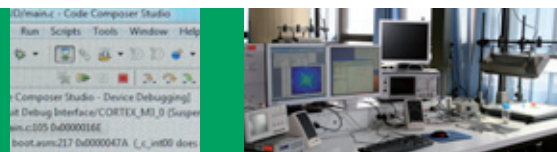
Complex systems that process various kinds of information can be found in many business and industrial sectors. In automotive systems, electronic control units determine from output of sensors the current stability state of the car and derive counter-measures in critical situations. User interfaces with touch panels read user inputs and control machines in automation industry. Autonomous vehicles in automated warehouses make use of various sensor signals to find the right shelf. Smart cameras check the quality of produced parts and goods, and wireless communication systems allow mobile devices to deliver location based services.

All these fields need women and men who have the engineering know-how to design the information processing components of such systems – as SW architects or designers, electronics engineers, system engineers or test and quality engineers. Graduates are also hired in (technical) marketing acting as a link between German companies and the markets, suppliers and business partners of their home countries worldwide.

The ability to put theoretical and state of the art knowledge into practice make our graduates very attractive for industrial employers. Equipped with project experience since the first semester, knowledge in project management and business and experiences from a mandatory industrial placement, they soon take on responsibility in companies.

Für deutsche Studieninteressierte:  
**Sie wollen gerne Technik studieren – warum nicht gleich auf Englisch?**

Die Sprache der Technik in Ihrem späteren Beruf als Ingenieurin oder Ingenieur wird Englisch sein – nicht nur in multinationalen Großunternehmen. Warum also nicht gleich vom ersten Semester an parallel Ihre englische Sprachkompetenz auf- und ausbauen? Das passiert fast automatisch und macht in einem Umfeld von Studierenden aus aktuell über 30 Nationen – englischen Muttersprachlern und Nichtmuttersprachlern – viel Spaß. Die interkulturelle Erfahrung, vielleicht auch in Verbindung mit einem Auslandssemester oder -praktikum bei einem unserer internationalen Partner, wird für Sie persönlich und bei Ihrem Berufseinstieg ein absolutes Plus sein.



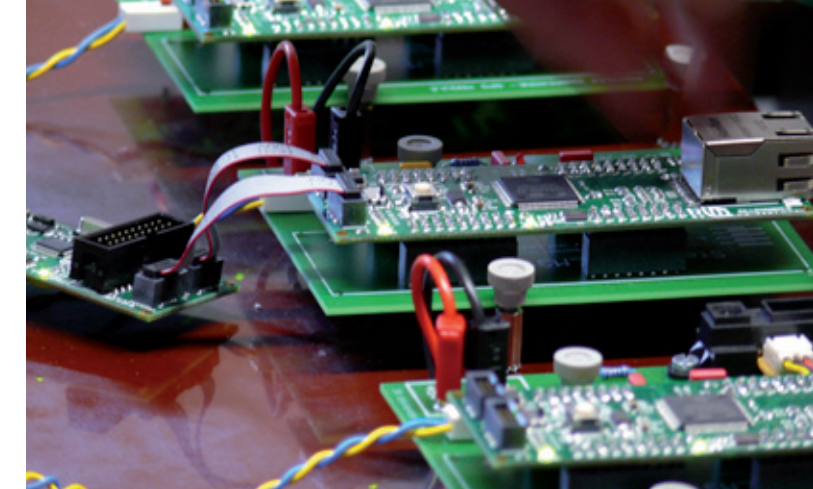
**HAW Hamburg – Hamburg University of Applied Sciences**  
**Faculty of Engineering and Computer Science**  
**Department Information und Electrical Engineering**  
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20099 Hamburg  
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**Admissions Office (Application, Admission)**  
Stiftstrasse 69, D-20099 Hamburg  
service phone: + 49 (0) 40 25 41 47 40  
Visit [www.haw-hamburg.de/english](http://www.haw-hamburg.de/english) to apply online

**Further information (Programme, Welcome)**  
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[www.haw-hamburg.de/information-engineering](http://www.haw-hamburg.de/information-engineering)

Hochschule für Angewandte Wissenschaften Hamburg  
Hamburg University of Applied Sciences



## Competence in software, electronics and information technology

Today's complex information processing systems require a system know-how that includes the software, hardware and information technology aspects of such systems.

The international Bachelor Programme (B.Sc.) Information Engineering which is completely taught in English enables our graduates to understand, specify, design and maintain such systems and to further specialise in the disciplines involved.

### Prerequisites

Are you interested in technical systems in which information technology, electronics and computer science interact? Do you enjoy abstract thinking, mathematics and sciences, maybe have already some programming experiences? Communicating and writing in English is not a problem for you and you enjoy studying and working in an international environment? And hands-on work in labs and projects is what you are looking for? Yes? Then we would be glad to welcome you to the programme!

### Application period (start of programme in September):

April 1 to May 31 for non-EU citizens  
June 1 to July 15 for German/EU citizens

See [www.haw-hamburg.de/information-engineering](http://www.haw-hamburg.de/information-engineering) for further details on the application process.



## Information Engineering

**Bachelor of Science (B.Sc.)**  
**International Programme**

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HAW, Fotolia, Paula Makert



## Curriculum

The programme which has been accredited by ASIIN is seven semesters in length, with a large part of the curriculum dedicated to practical experience in the form of lab work, student projects and a semester in industry.

### Software design

After the foundations for successful and structured software development are laid in procedural and object-oriented programming (e.g. in C and Java), students learn the concepts of software engineering in order to translate real-world problems into structured SW specifications. Further topics are the efficient realization of algorithms, the handling and structuring of complex information in data bases and the implementation of SW on embedded and server systems with operating systems like Linux and Android.

### Electronic systems

In modules on Electrical Engineering and Electronics the students learn how to design analog and mixed-signal electronic circuits. Subsequent modules cover the design of hard- and software for digital and embedded systems including modern microcontrollers, and explain how these systems interact with sensors and in communication networks.

### Communication and multimedia

When the mathematical concepts of signal processing have been introduced in Signals and Systems, students study the principles of today's digital communication systems (e.g. GPS, wireless communication and sensor networks) and algorithms for processing of multimedia signals like audio or video data.

### Elective and non-technical modules

Non-technical modules are dedicated to improving study skills, scientific and project work skills as well as to the fundamentals of business and management, intercultural competences and German language. Elective modules and projects, the industrial placement and the Bachelor's thesis project allow students to specialise in their favourite field of Information Engineering.

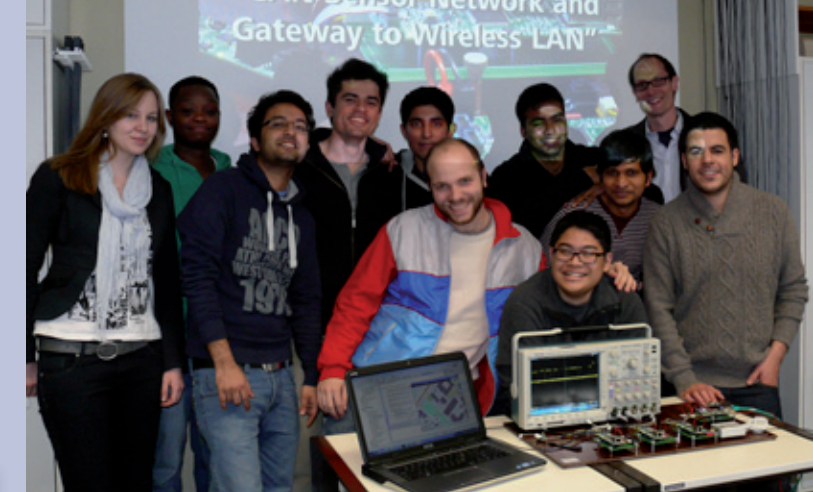
### Consecutive Master's Programmes

Our graduates of the B.Sc. 'Information Engineering' are not only widely accepted in industry but also internationally at universities for Master's programmes in computer sciences, electrical engineering and information technology. Hamburg University of Applied Sciences currently offers three consecutive M.Sc. programmes: 'Microelectronic Systems', 'Information and Communication Technology' and 'Automation Technology' – a good moment to change after 7 semesters the medium of instruction from English to German.

## Information Engineering

### International Bachelor of Science (B.Sc.) Programme

1. Semester	2. Semester	3. Semester	4. Semester	5. Semester	6. Semester	7. Semester
Software Construction 1	Software Construction 2	Algorithms and Data Structures	Software Engineering	Industrial Placement and Colloquium	Digital Communication Systems	Elective Course 1
Mathematics 1	Mathematics 2	Signals and Systems 1	Signals and Systems 2		Digital Signal Processing	Elective Course 2
Electrical Engineering 1	Electrical Engineering 2	Digital Circuits	Digital Systems		Bus Systems and Sensors	Compulsory Project
German	Electronics 1	Electronics 2	Microcontrollers		Operating Systems	Bachelor's Thesis
Learning and Study Methods	Learning and Study Methods Project	Economics and Management	Databases	Scientific and Project Work	Elective Project	
	Intercultural Competence					



## Hamburg University of Applied Sciences

With over 16.000 students, Hamburg University of Applied Sciences is the second largest institution of higher education in the Hamburg region and one of the largest of its kind (university of applied sciences) in Germany. Founded in 1970, our roots go back to the 18th century. Hamburg University of Applied Sciences offers within its four faculties a wide range of degree programmes for which practice orientation is our trademark: theory from lectures is put into practice in the laboratories, study projects are completed in the form of case studies, and close cooperation with industry ensures a direct link to the future field of work. Small groups, mentoring and buddy programmes and academic support ensure that our students feel at home at our university. 2.100 international students study at Hamburg University of Applied Sciences (13% of all students), representing over 100 nations.

### Hamburg

In the North of Germany and in the heart of Europe; Hamburg is Germany's second largest city (1.8 million inhabitants) and an international port city with excellent quality of life and international flair. Hamburg is one of the most dynamic commercial centres in Europe, with a strategic focus on six innovative segments: aviation, the international port and logistics, IT and media, life sciences, renewable energies and nanotechnology.

