



## Computer Science - Bachelor of Science -

### WHY COMPUTER SCIENCE IS IMPORTANT

Experts are at one that the key technologies Computer and Internet have created a potential for innovation whose extent and impact on the future can only be estimated today. The use of Computer Science is not limited to the omnipresent personal computers as it can be found in most households and companies today, but comprises a broad range of products of everyday-life which are continuously being improved with the help of micro-processor technology.

### JOB PROSPECTS

Computer Scientists can find a huge range of employment, which is bound to increase in future times. They are needed for planning, application and maintenance of software and hardware in the technical and commercial departments of industrial companies, in commerce, in banks, insurances and in public administrations. The biggest demand at the moment is from information and telecommunication industry.

### YOUR PROFILE

The Bachelor's Degree course concentrates on the basic features and will give you a comprehensive, sound basis in computer science. This course is ideal for all those who want to master the methods and procedures of modern software engineering, who would like to play your role in the development of innovative products and services in an active and creative manner.

The ability to abstract is essential for successful studying this degree course. The further keys to success are team working abilities, flexibility and life-long learning, as is the case in all engineering courses. Is our Computer Science course an option for women as well? Positively! After all it was Lady Ada Lovelace who made history as the first programmer.

This Bachelor degree course is the basis for our consecutive Master's degree programme where you can deepen your knowledge in special areas of computer science application.

### HOW THE STUDIES ARE ORGANISED

The Bachelor's degree course is taught in 7 semesters; it consists of a basic and an advanced studies period.

The basic studies period comprises semesters 1 and 2. In addition to the fundamentals of mathematics, natural science and technology you will learn the basics of computer science, including the design and function of IT systems, and you will undergo very intensive training in the theory and practice of programming.

The advanced studies period will provide key competences essential for working as a computer scientist or IT-specialist. It consists of four academic and one work placement semester. Important topics here are sound knowledge of computer technology and networks and the design and functioning of operating systems, data bases, distributed systems, internet and web technologies. Special emphasis is put on software engineering, dealing with the design of software systems from an engineering point of view.

Project works in computer science and course-related compulsory electives will provide you with an opportunity to shape your studies according to your individual needs. The advanced studies in semesters six and seven consist of a whole range of electives which you may select from two different streams: either Applied Informatics or Business Informatics.

The studies are capped off with a Bachelor thesis in which you will independently work on a challenging problem from computer science and solve it under the supervision of a full-time faculty member. The thesis can be completed either at the university or in industry. After successful graduation the university will award the academic degree Bachelor of Science (B.Sc.).

You are recommended to do a basic work placement of at least six weeks prior to study begin. It can be completed in all departments of companies, authorities and universities where use of electronic information management system is an important part of the every-day work routine. This will give you an overview of the wide range of applications in computer science.

The work placement semester (semester 5) will provide an excellent opportunity to apply your knowledge gathered by then and to put it into practice in a real-life computer science work environment. This will make you understand better the connection between theory and practice and provide you with early professional work experience, which is one of the main features of studies at Universities of Applied Sciences, and which may be a cutting edge when it comes to looking for a job.

## LIST OF STUDY MODULES

### Basic Studies (Semesters 1 and 2)

- Introduction to Computer Science
- IT-Systems / Computer Architecture
- Programming 1 and 2
- Algorithms and Data Structures
- Computer Science Theory
- Analysis
- Business Information Systems
- Linear Algebra and Analytical Geometry
- Computer Architecture
- Compulsory General Elective

### Advanced Studies (Semesters 3 to 7)

- Discrete Mathematics
- Data Bases
- Software Engineering 1 and 2
- Software Engineering Laboratory
- Operating Systems
- Compiler
- Theory of Probability and Numerical Solutions
- Internet Technologies
- Distributed Software Systems
- Project Management
- Computer Networks
- IT-Security

- Work Placement (5<sup>th</sup> semester)
- Seminar
- Project Work
- Course-related compulsory electives (students have to choose 4 courses)
- Bachelor thesis/ Bachelor seminar

## CONTACT

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## IMPORTANT LINKS

(Information in English on our website)

[www.hs-kempton.de](http://www.hs-kempton.de) > INTERNATIONAL > click English flag (in the top left-hand corner)

[Information for international exchange students](#)  
(> INTERNATIONAL > EXCHANGE STUDENTS / INCOMING)

[Study programmes – short description in English](#)  
(> INTERNATIONAL > DOWNLOADS > Study Programmes)

[Guests and Visitors at Kempten University](#)  
(> INTERNATIONAL > GUESTS AND VISITORS)

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**PLEASE NOTE** that, although this description is written in English, the study course is taught in German.