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Student Admission, Registration and Training in German Language

INTERNATIONAL STUDENT AFFAIRS

STUDIENBRÜCKE

Universität Siegen

Studying in Siegen

Bachelor's Degree Programs

- Studienbrücke 2024 -

Contents

Business Administration (Betriebswirtschaftslehre)

Degree: Bachelor of Science

Regular study time: 6 semesters

The degree program

The B.Sc. in Business Administration leads students to their first academic title of the two-level degree program concept (bachelor's/master's degree) and therefore also to their first professional qualification. The degree program is modular and integrative, with the specialization in business administration being supplemented by contents from the fields of economics, law and business information systems. The degree program offers many elective and specialization options and at the same time provides training with a clear practical orientation.

The bachelor's program starts with the basic subjects in business administration, business information systems, mathematics and statistics in the first and partly in the second year of study. In the second year of study, economics and the first special field of business administration are also treated, while the third year of study finally includes key qualifications, the second special field of business administration, analytical specialization and an elective subject. The bachelor's thesis must be written in the 6th and final semester.

Special fields of business administration include:

- Business Taxation
- Controlling
- Banking and Finance Management
- Management of Small and Medium-Sized Enterprises (SMEs)
- Marketing Management
- Media Management
- Operations Research in Logistics
- HR Management and Organization

- Production and Logistics Management
- Technology Management
- Environmental and Added-Value Management
- Business Information Systems
- Auditing

Professional prospects

The successful completion of this degree program qualifies students to perform diverse commercial/business administration tasks, both executive and managerial, in many different areas. All planning, steering, controlling and administrative activities in small and medium-sized enterprises in all sectors, but also in large enterprises, associations and public administration are possible. The broad range of specialization, elective and immersion options permits individual study biographies and gives students diverse entry options in nearly any sector.

Organization of the degree program

Subject examination regulations/degree plans/module handbooks/internship regulations

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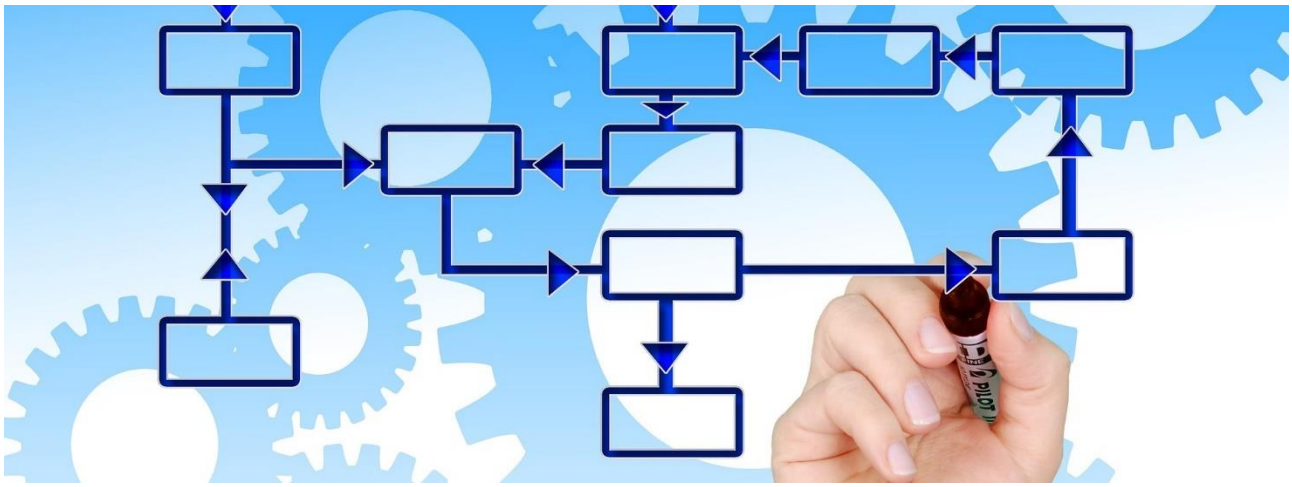
- Subject examination regulations
- Degree plan
- Module handbooks

Master's degree programs

- Entrepreneurship and SME Management
- Management and Markets
- Accounting, Auditing & Taxation
- Controlling and Risk Management
- Plural Economics
- Business Analytics

Business Information Systems (Wirtschaftsinformatik)



Abschluss: Bachelor of Science

Regelstudienzeit: 6 Semester

The degree program

In our modern information society, the economy is strongly characterized by continually evolving information and communication systems (ICS). IT solutions offer innovative technical options to optimize processes in companies and improve the supply of information. This interface is exactly where the degree program in Business Information Systems starts. The study of Business Information Systems uses approaches from business administration, computer science, mathematics and economic law to analyze, design and use ICS. The bachelor's program in Business Information Systems can be divided into three domains:

- Basic knowledge of business administration
- Introduction into computer science and mathematics
- Aspects of modeling and design of operational application systems

The basic tools of business administration are taught in the modules on accounting and financial statements, cost and revenue accounting, investment and financing, logistics and production. Another domain is formed by the modules on computer science that treat the topics of databases and software technology, among other things. These modules are supported by basic courses in mathematics. The third domain is the link between the first two. Basic aspects of modeling and design of operational application systems are taught here. Modules on logistics, IT security and the use of application systems complement the range of courses offered.

Important information

The degree program includes various internships (design internship, programming internship, company internship).

Professional prospects

Business Information Systems professionals work in many different industries and companies of different sizes in the IT and media sector. Possible fields of work include:

- Development of business information systems
- Operating system administration and use
- Implementation of software systems and products
- IT project management
- IT advisory services and consulting
- User training and support
- Distribution of IT systems

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- Subject examination regulations
- Degree plan
- Module handbooks

Master's degree programs

- Human Computer Interaction
- Computer Science
- Business Information Systems
- Business Analytics

Chemistry (Chemie)

Degree: Bachelor of Science

Regular study time: 6 semesters

The degree program

The bachelor's program in Chemistry is designed to ensure, by way of well-founded, compact basic chemical training, that students acquire professional qualifications in the field of chemistry. Additionally, this degree program is intended to teach the theoretical and practical basics for a further scientifically oriented master's degree program with a subsequent doctorate.

The basic training in Chemistry at the University of Siegen includes the following core subjects: Inorganic Chemistry, Organic Chemistry and Physical Chemistry. The secondary subjects of basic training in Chemistry are: Analytical Chemistry, Construction and Materials Chemistry and Macromolecular Chemistry.

Furthermore, the acquisition of key qualifications in the handling of chemical substances (law, safety, toxicology) and the acquisition of professional qualifications in the areas of communication, foreign languages and database administration are essential components of the degree program.

The first two semesters focus on general scientific basics of the subject of Chemistry as well as the basics of physics and mathematics. In this part of the degree program, students are intended to acquire solid basic knowledge according to the requirements of a degree program in natural sciences. In the two subsequent semesters, students are intended to learn to understand and discuss basic chemical phenomena and questions as well as solve chemical problems with scientific methods. The 5th and 6th semesters serve to expand on the subjects of chemistry. The possibilities of combining the compulsory elective subjects are almost unlimited and enable students to focus on specific subdisciplines of chemistry with research-oriented specializations. In the last third of the bachelor's program, students consequently acquire the key qualifications that ensure a successful transition to the research-oriented master's degree program.

Professional prospects

Generally, typical employers of graduates are companies in the chemical industry.

Organization of the degree program

Subject examination regulations/degree plans/module handbooks/internship regulations

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- Subject examination regulations
- Module handbooks and Degree plans

Master's degree programs

- Chemistry (Language: English)
- Materials Science and Engineering
- Nanoscience and Nanotechnology (Language: Englisch)

Civil Engineering (Bauingenieurwesen)

Degree: Bachelor of Science

Regular study time: 6 semesters

The degree program

Civil engineers are involved in the planning, construction, renovation and maintenance of objects in the fields of civil engineering, hydraulic engineering and transport construction. This includes structures such as bridges, tunnels, skyscrapers, roads, canals, sewage treatment plants, but also offshore wind turbines and train stations, to name just a few examples. An interest in and enjoyment of mathematical and scientific subjects facilitate the degree program. The bachelor's program in Civil Engineering can be divided into three sections:

- Basic study (compulsory)
- Consolidation studies (compulsory)
- Specialization (elective)

The basic studies of mathematics and natural sciences and the first more specific subjects (building construction, materials science, geodesy, construction mechanics, etc.) are followed by the lectures of the consolidation studies. The basic knowledge of the classic subject fields taught here comprises structural analysis, geotechnology, structural engineering, traffic management, water management, building operation and construction law. In the last semester, students will choose an area of special focus from the subjects of structural engineering, water management or traffic management, depending on their inclinations and the activities planned in their later professional lives.

Important information

- Practical construction work for a total of 12 weeks at the latest until the start of the 4th semester. Out of these, at least 6 weeks must be completed at a construction site; planning and office work is accepted for the remaining time. We recommend completing the entire internship before starting the degree program.
- Also offered as a dual study program with practical integration (degree program + practical work in the company).

Professional prospects

In the past, civil engineers mainly devoted themselves to the design and construction of bridges, canals and roads. Over the last decades, they have developed the scientific basics that today enable them to create large-scale buildings including skyscrapers, industrial facilities, traffic and hydraulic structures. In addition to the technical challenges, tasks of construction and project management are increasingly assigned to civil engineers today.

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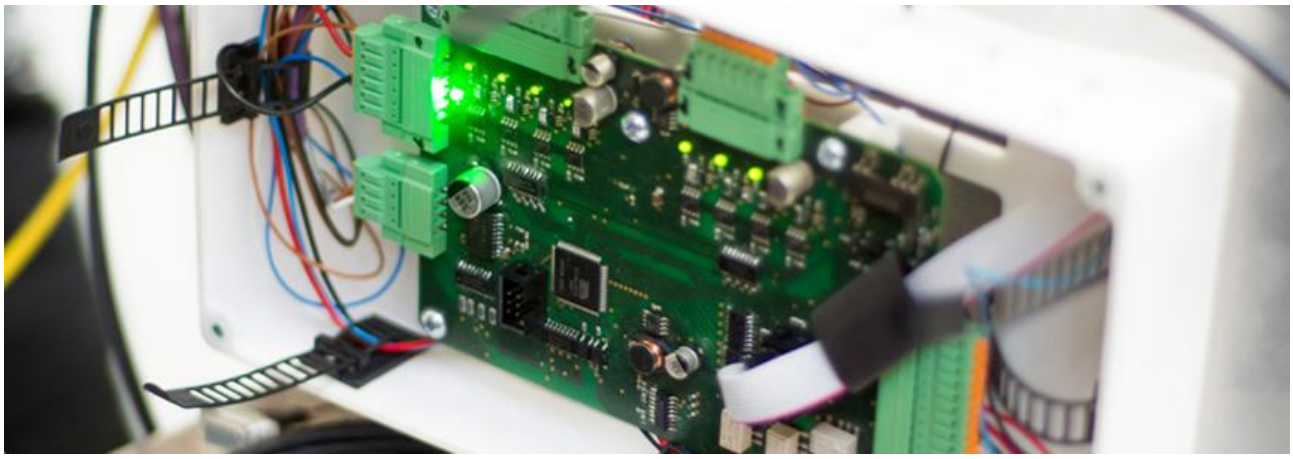
- Subject examination regulations
- Module handbooks
- Internship regulation

Master's degree programs

- Civil Engineering

Computer Science (Informatik)



Degree: Bachelor of Science

Regular study time: 6 semesters

The degree program

Our society today is permeated by technical innovations. One innovation is quickly followed by the next and development keeps accelerating. From apps for smartphones to on-board computers in cars to controls in power plants, Computer Science ensures the smooth, secure and convenient use of technology everywhere.

The first three semesters of the degree program focus on various programming and modeling languages as well as the teaching of mathematical, theoretical and technical basics. This will then be followed by more detailed basics of Computer Science, such as computer architectures, computer networks, operating systems, software technology, database systems and computer graphics as well as a hardware internship and a programming internship and an internship for one of the basic modules. In addition to the bachelor's thesis, 20-25% of the degree program volume are reserved for an application or advanced study module. For this, it is possible to choose between embedded systems (technical computer science), visual computing, complex and intelligent software systems(sofware technology) and medical computer science.

The goal of the training is to teach an adequate range of methods and basics for professional work in projects for the development of software or digital hardware. Students are supervised by professors as mentors in their choice of subjects. A master’s degree program is offered that builds on the bachelor's program.

Important information

Also offered as a dual study program with practical integration (degree program + practical work in the company).

Professional prospects

The profession of a computer scientist includes diverse activities involving participation in projects to explore fundamental issues or to develop, operate and maintain complex information processing systems. This includes many industries such as the information and communication industry, the media industry, medical technology and health care, the manufacturing industry or the automotive and automotive supply industry.

Organization of the degree program

Subject examination regulations/degree plans/module handbooks/internship regulations

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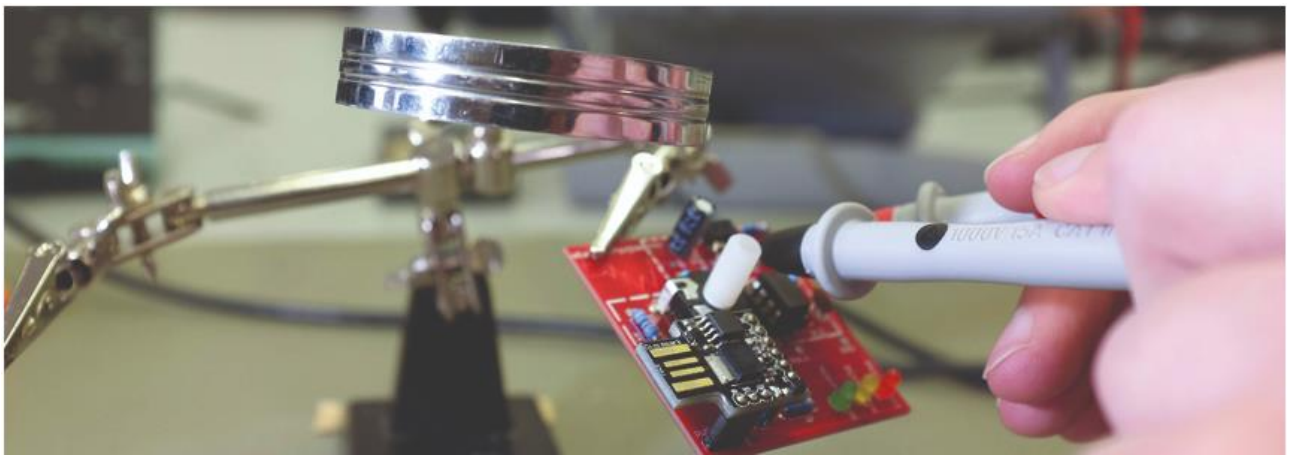
- Subject examination regulations
- Degree plans
- Module handbooks

Master's degree programs

- Computer Science
- Human Computer Interaction
- Materials Science and Engineering
- Mechatronics (Language: English)
- Business Analytics

Digital Medical Technology - Digital Biomedical and Health Sciences (Medizininformatik)



Degree: Bachelor of Science

Regular study time: 6 semesters

The degree program

This innovative degree program for health professions of the future, which is unique in Germany, imparts a broad knowledge from the fields of medicine, natural sciences, computer science as well as social and health sciences. It aims at a new occupational profile in the health care professions, in which academic professionals are trained in an interdisciplinary setting with a focus on the challenges and opportunities of digitalization. The degree program makes it possible to focus on the natural sciences, engineering or social sciences and thus offers a wide range of medically related training opportunities. Prospective students should be communicative and open-minded, as well as eager to learn and work in an interdisciplinary setting. Approximately 60 percent of the course content is the same regardless of the chosen specialization and promotes central knowledge and skills in the health system. With the continuation of the studies, the common teaching content decreases and specialization towards the selected focus increases. Changing the area of special focus is possible.

Areas of special focus

The specialization in the field of “Digital Medical Technology" provides students with basic knowledge in mathematics, computer science and IT systems in the first semesters. In the following years of study, the focus is on competences in medical technology, digital medical image processing, hospital information

systems and telematic approaches in the context of modern forms of care. Internships in clinics and in clinical IT provide insights into the practice of various professional fields at the interface between technology and medicine.

Professional prospects

Graduates develop digital, technical scientific and structural innovations that support the interaction between doctor and patient efficiently and in line with their needs. You will be able to work in various exciting professional fields, both constantly growing traditional ones and those emerging in future. Examples are the manufacture of medical devices, the establishment of complex administrative systems in the health sector, companies in research and science, and organizations and institutions of the health system.

Important information

Under certain conditions, it is also possible to take up the course of study with a technical college entrance qualification (Fachhochschulreife). You can find more information here

- Examination regulations

Master´s degree program

- Medical Data Science

Economics (Volkswirtschaftslehre)

Degree: Bachelor of Science

Regular study time: 6 semesters

The degree program

Within the scope of the 6-semester bachelor's program, students will deal with monetary, structural and sectoral problems of the European economy (in particular monetary, currency, financial, competition, growth and environmental policy of the EU) as well as questions of European cultural, economic and social history. The focus will be specifically on the challenges of European integration and global integration and global interdependence.

The degree program has a modular structure, with 21 modules divided into compulsory and compulsory elective modules. In the first phase of the degree program, students learn mathematical, statistical and subject-specific methods; in the later semesters, they will acquire specialist skills in the typical fields of economic theory. Additionally, synergies with other subjects of the faculty (e.g. business administration, economic law, business information systems) as well as with subjects from other disciplines are created.

Study structure

Section I - basic studies

1st - 3rd semester

Compulsory modules: Analytical Methods, Microeconomics I + II, Macroeconomics I + II, Introduction to European Economic Policy, Descriptive Statistics + Inductive Statistics, Accounting and Financial Statements, Investment and Financing, Cost and Revenue Accounting, Communication Skills. Study section II - Advanced studies

Section II - deepening

4th - 6th semester

Compulsory modules: Monetary Policy and Public Economics in Europe, Industrial Economics and Competition Policy in Europe, International and Regional Economics in Europe, European Economic History, Empirical Economic Research, Fundamentals of Public Economic Law, Seminars, Compulsory elective module.

Bachelor thesis

Professional prospects

With a bachelor's degree in Economics, you will acquire knowledge of basic contexts of economic policy and theory as well as business administration and mathematical knowledge that will give you outstanding career prospects in many industries. The European orientation will specifically prepare you for work in internationally operating companies or institutions. Potential employers include:

- State institutions at the local, regional, national and European level (ministries, administration, European Commission, etc.)
- Banking and finance (ECB, Bundesbank, private banks, IMF)
- International organizations (OECD, WTO, UNICEF)
- Private sector (corporate consultancies, auditing companies and large corporations)

Organization of the degree program

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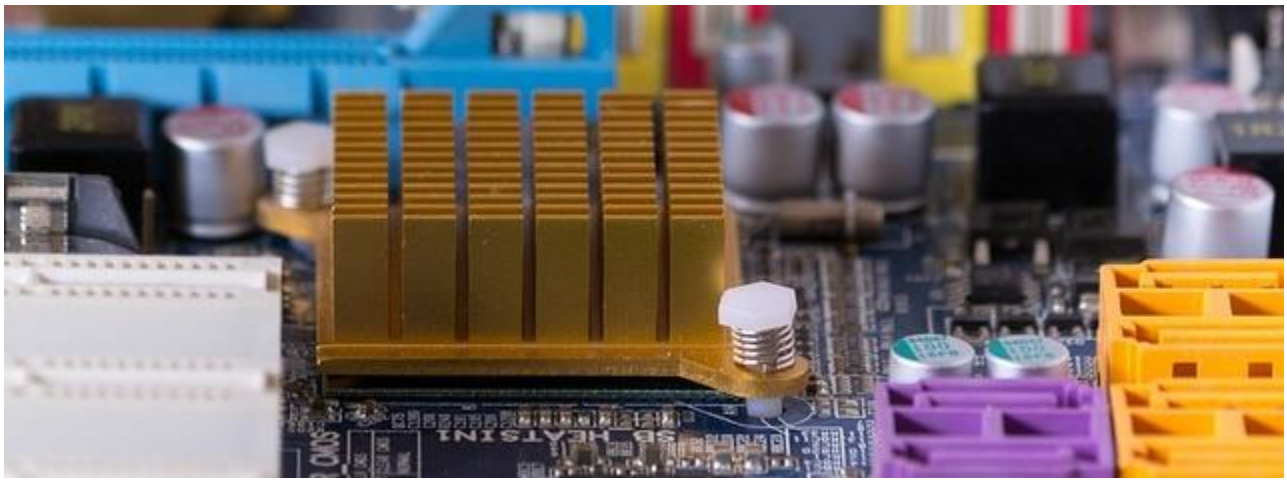
- Subject examinations regulations
- Degree plan
- Module handbooks

Master's degree programs

- Economic Policy
- Plural Economics
- Business Analytics

Electrical Engineering (Elektrotechnik)



Degree: Bachelor of Science

Regular study time: 6 semesters

The degree program

The bachelor's program in Electrical Engineering is oriented towards basic principles and methods. In 6 semesters, it teaches all professional basics and methods that are required for solving problems in the fields of Electrical Engineering. Specialization takes place later in the master's degree program. Another goal is to teach key qualifications such as communication, teamwork, presentation and moderation skills. Great importance is attached to ensuring that students acquire a well-founded specialist and system knowledge in the major areas of electrical engineering, which is taught in the basic modules. This permits an understanding and the analysis of interrelations in electrical engineering systems.

Important information

- A relevant pre-study internship with a minimum duration of 14 weeks should usually be documented before registering for the first examination in the 3rd semester of the degree program.
- Also offered as a dual study program with practical integration (degree program + practical work in the company).

Professional prospects

Electrical engineers work in nearly all branches of industry and services, in conventional electrical engineering and electronics as well as in mechanical and automotive engineering, in medical technology or in the IT and telecommunications industries. Electrical engineers are innovators, not only in the conventional fields of electrical engineering and information, but also in other key industries.

Electrical Engineering and Computer Science - a strong combination!

Few other scientific disciplines are more representative of the infrastructure that forms the lifeline of modern industrial societies than electrical engineering and computer science. From power plants to microprocessors, from high-speed trains to small cars, from rolling mill controls to mobile phones, everywhere hardware and software, electrical engineering and information technology ensure that technology can be used smoothly, safely and conveniently.
The Department of Electrical Engineering and Computer Science at the University of Siegen is one of the few institutions in Germany that combines research and teaching in electrical engineering and computer science in one unit.

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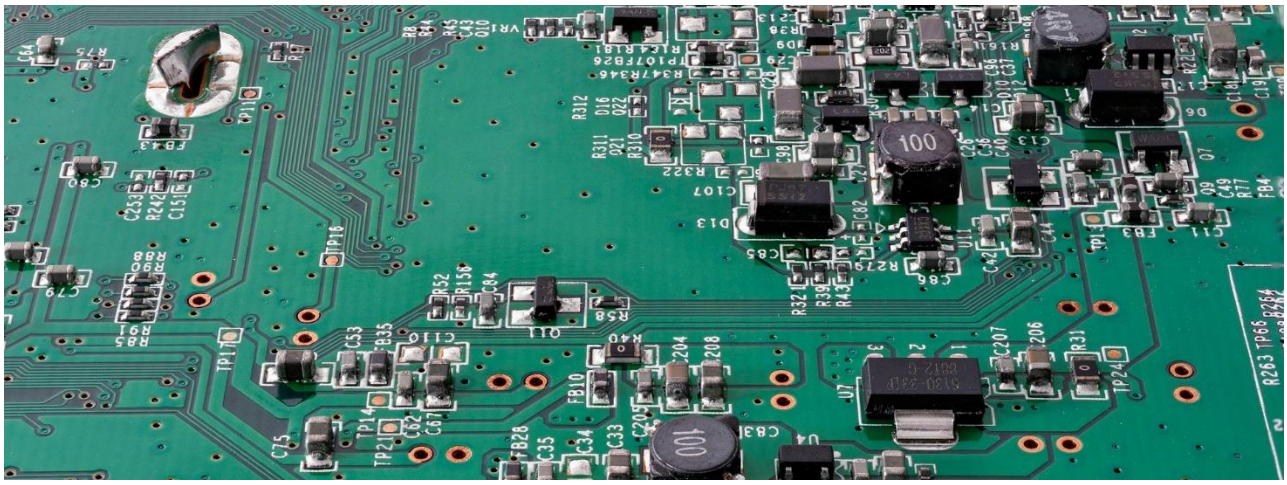
- Subject examination regulations
- Degree plans
- Module handbooks
- Internship regulations

Master's degree programs

- Electrical Engineering
- Mechatronics (Language: English)
- Materials Science and Engineering
- Nanoscience and Nanotechnology (Language: Englisch)

Computer Science (Informatik)



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Master's degree programs

- Computer Science
- Human Computer Interaction
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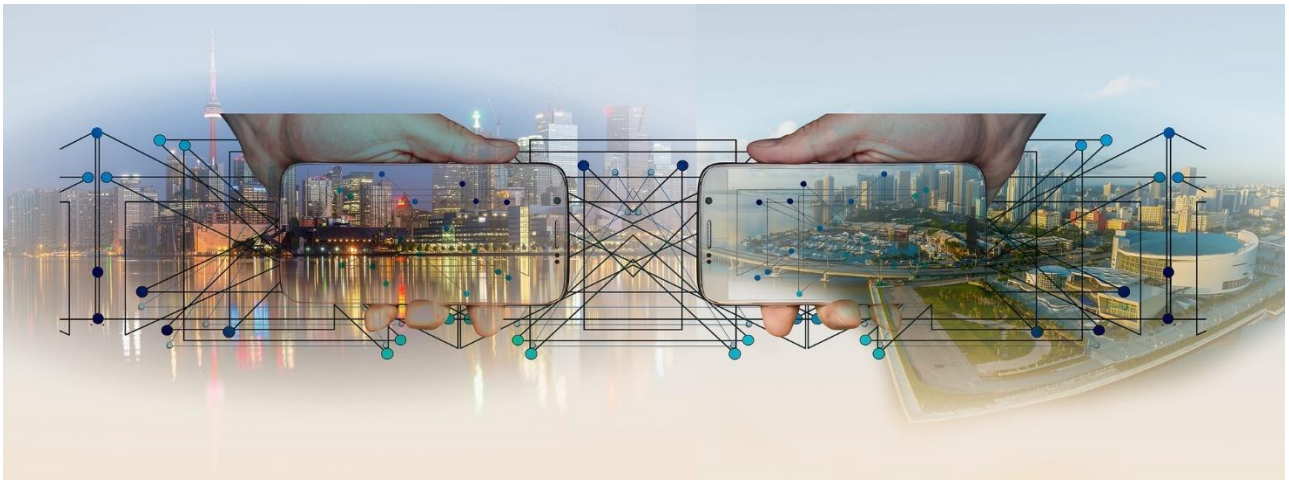
- Mechatronics (Language: English)
- Business Analytics

Industrial Engineering (Wirtschaftsingenieurwesen)



Degree: Bachelor of Science

Regular study time: 6 semesters

The Degree Program

The goal of the degree program is to provide a general and complementary education in the fields of mechanical engineering and economics. A double qualification is intended to be achieved in these areas of knowledge. In the first two years of study, students are primarily expected to acquire a sound basis for theoretical and applied knowledge. In the third year of study, students are intended to learn the required technical knowledge and practical skills that permit a successful interdisciplinary and team-oriented career in the field of industrial engineering. By choosing a subject from a broader range of disciplines and by choosing a special field in business administration, students can acquire an individual training profile according to their personal interests.

Important informations

- A basic internship of at least 8 weeks before the start of the degree program: Getting to know the materials and their workability; overview of the manufacturing equipment and procedures. The internship must be recognized by the internship office and submitted to the examination office no later than by the end of the 3rd semester **and**
- at least 7 weeks of subject-related internship during the degree program: Complementing and enhancing the knowledge acquired in the degree program through work in different operational areas and initial introduction to engineering practice.

Professional prospects

Overall, the bachelor's program, taking into account the requirements of the professional world, is intended to provide students with the necessary basic knowledge, relevant methods and skills to such a degree that they will be able to work independently as industrial engineers in mechanical engineering or other sectors of the economy, as well as in scientific fields. At the same time, students are introduced to the current state of knowledge and expertise in this professional field, so that they can continue their studies in a master's degree program.

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- Subject examination regulations
- Degree plans
- Module handbooks
- Internships regulations

Master's degree programs

- Industrial Engineering
- Mechatronics (Language: English)
- Materials Science and Engineering

Mathematics (Mathematik)

Abschluss: Bachelor of Science

Regelstudienzeit: 6 Semester

The degree program

The first semesters are dedicated to teaching the basics of analysis, linear algebra, numerical mathematics I, stochastics I and the basics of the application subject. Additionally, there are further compulsory elective modules such as function theory, functional analysis, algebra and number theory. In the last semesters, modules from the courses offered in mathematics can be chosen according to the focus of interest. A mandatory counseling interview will support students in organizing their degree program.

The following application subjects can be chosen:

- Natural sciences and technology
- Business mathematics
- Philosophy

Professional prospects

Mathematicians are not only characterized by specialist knowledge, but in particular by skills such as the ability to think abstractly and logically as well as to grasp and structure complex issues. Possible tasks in business and industry are:

- Creation of risk forecasts (insurance) / analysis of price developments in the financial sector (shares, etc.)
- Improvement of encoding techniques, e.g. for online banking and telephone, internet, music and images
- Optimization of schedules, e.g. for trains, buses and planes

- Development of mathematical models (automotive, aerospace, steel industry, medicine)
- Processing and evaluation of data, e.g. in banks and insurance companies

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The internship regulations define the conditions under which the compulsory or optional internships must be completed.

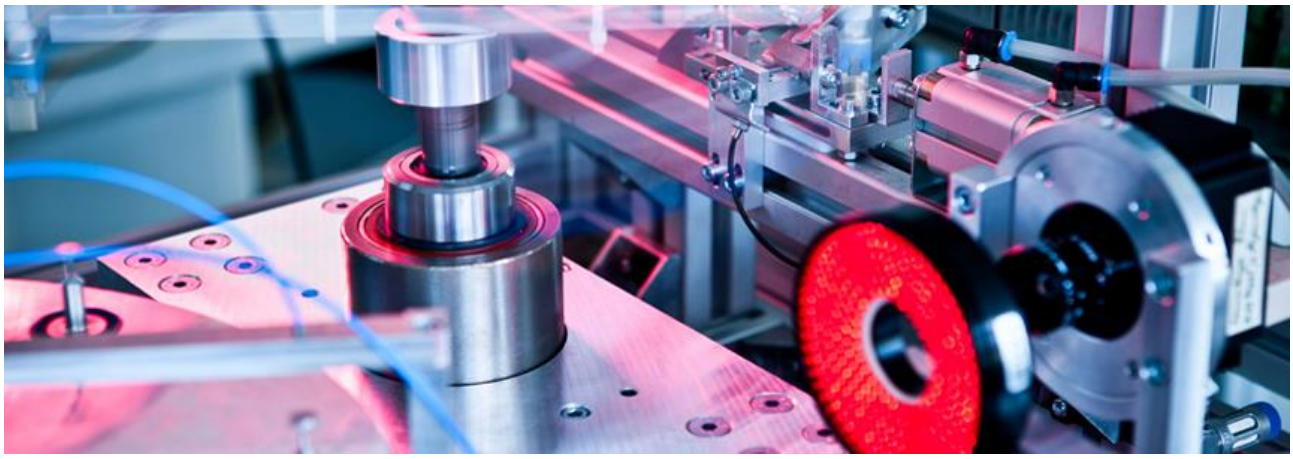
We recommend that, as a minimum, you take a look at the degree plan of your degree program before the start of the lecture period so that you know which modules are intended for the start of your studies.

- Examination regulations and further information

Master's degree programs

- Mathematics
- Business Analytics

Mechanical Engineering (Maschinenbau)



Degree: Bachelor of Science

Regular study period: 6 semesters

The degree program

The bachelor's program in Mechanical Engineering teaches basic skills in mathematics, natural sciences, and engineering. The students set their own priorities by choosing courses for engineering specializations. Another goal is to teach social skills and key qualifications such as communication and teamwork, presentation and moderation skills and the ability to use modern information technology. Graduates are able to carry out engineering work in mechanical engineering companies or in other areas of the economy. Students can also continue their studies in a master's degree program. After successfully completing their bachelor's program, they will receive the academic title of Bachelor of Science, abbreviated B.Sc.

Important information

- A basic internship of at least 8 weeks before the start of the degree program: Getting to know the materials and their workability; overview of the manufacturing equipment and procedures. The internship must be recognized by the internship office and submitted to the examination office no later than by the end of the 3rd semester **and**
- at least 6 weeks of subject-related internship during the degree program: Complementing and enhancing the knowledge acquired in the degree program through work in different operational areas and initial introduction to engineering practice.
- Also offered as a dual study program with practical integration (degree program + practical work in the company).

Professional prospects

There has been a general shortage of engineers for many years. This long-term assessment has been confirmed even in recent years with weak economic activity in the industrial sector. The engineering graduates of the University of Siegen had virtually no problems in recent decades finding employment adequate for their training, whether in industry or in research. The important economic sectors in which graduates are employed include mechanical engineering, automotive engineering and the metal production and metalworking sector. The assessments of both the companies and the graduates confirm that there is a high demand for engineers with a bachelor's degree. Experience also shows that many successful bachelor's graduates aim for the subsequent consecutive master's degree as well.

Organization of the degree program

Subject examination regulations/degree plans/internship regulations

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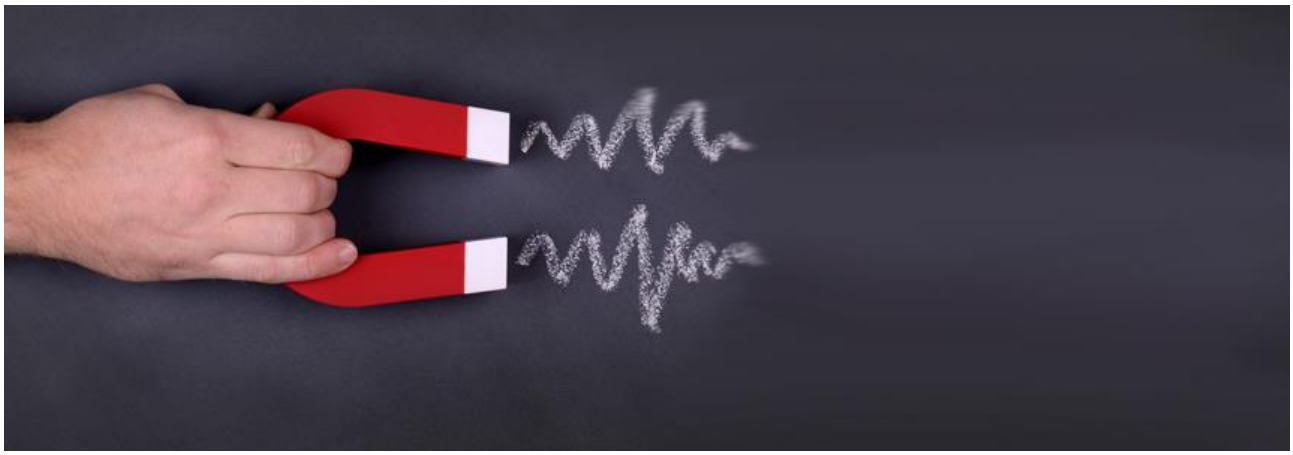
- Subject examination regulations
- Degree plans
- Internship regulations

Master's degree program

- Mechanical Engineering

Physics (Physik)



Degree: Bachelor of Science

Regular study time: 6 semesters

The degree program

Modern physics has decisively shaped our view of the world. Physics is the basis of all engineering and natural sciences and many technological developments would be impossible to imagine without an understanding of the physical interrelations. The bachelor's program offers a comprehensive overview of the fundamentals of physics and thereby provides access to the current fields of research such as elementary particle physics, astrophysics, quantum optics or solid-state physics. This is complemented by corresponding training in mathematics and the teaching of interdisciplinary qualifications such as writing of scientific texts, technical-scientific programming and presentation skills in German and English. Additionally, students acquire broad knowledge in the practical area of physics as well as in fields of other natural or engineering sciences as an area of special focus.

The courses in the bachelor’s program in Physics include:

- Experimental physics
- Theoretical physics
- Mathematics
- Courses from the compulsory elective modules

The compulsory elective section includes other areas of experimental and theoretical physics, such as astroparticle physics / cosmology, general relativity, elementary particles, optics or radiation protection physics. The elective subjects not from the subject of Physics offer a broad range from the degree programs in Mathematics, Chemistry, Electrical Engineering, Computer Science, Mechanical Engineering and Economics.
In order to bring school graduates to a comparable level of knowledge in the basics of physics and mathematics, preliminary courses are usually offered before each semester.

Professional prospects

Graduates of the bachelor's program in Physics are well prepared for the master's degree program in Physics and are in demand in many professional fields. The options range from scientific institutions and development departments of industrial companies to the entire IT sector, production and sales to insurance companies, banks and corporate consultancies.

Organization of the degree program

Subject examination regulations/degree plans/module handbooks/internship regulations

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- Subject examination regulations
- Degree plans
- Module handbooks

Master's degree programs

- Physics (Language: German or English)
- Materials Science and Engineering
- Nanoscience and Nanotechnology (Language: Englisch)