
CIVIL ENGINEERING

**CIVIL
ENGINEERING**
B.Sc.
M.Sc.

DEGREE PROGRAMME CIVIL ENGINEERING

Are you interested in tackling new, creative challenges, such as designing computer-aided simulations, tunnels through mountains or breath-taking bridges? Do you enjoy scientific and technical subjects and like working with numbers and technical equipment? Then come to Weimar!

The department of Civil Engineering offers you the following degree programmes:

- _ B.Sc. in Civil Engineering [Structures Environment Building Materials] (standard period of study 6 semesters) with specialisation in:
 - Structural Engineering
 - Environmental Engineering
 - Building Material Engineering
- _ M.Sc. in Civil Engineering (standard period of study 4 semesters)

For more information, please visit:

www.uni-weimar.de/civilengineering.

»Structures of civil engineering represent the foundation of development for all human cultures. From ancient canals or viaducts to Gothic cathedrals to the massive bridges of modern times, their history is simply breath-taking. The civil engineering profession is one of great responsibility. Not only does it offer professional fulfilment, but the chance to create long-lasting structures. Every successive development in society, every necessary technical and desired innovation requires the active and professional contribution of highly qualified civil engineers.«

Prof. Dr.-Ing. Frank Werner, Head of the degree programme

BACHELOR'S DEGREE PROGRAMME CIVIL ENGINEERING [STRUCTURES ENVIRONMENT BUILDING MATERIALS] (B.SC.)

The first four semesters of the Bachelor's Degree Programme in Civil Engineering [Structures Environment Building Materials] introduce you to the skills and methods of the field, which you will then use in the fifth and sixth semesters to focus on one of the three areas of specialisation: Structural Engineering, Environmental Engineering, or Building Material Engineering. Regardless of which area of specialisation you choose, you will gain knowledge and skills for your professional life, in order to plan and design, construct and organise and shape our built environment. You will acquire a quality academic professional qualification and can pursue the areas of specialisation in the appropriate Master's degree programmes.

For more information, please visit:

www.uni-weimar.de/civilengineering.



WHAT DOES THE PROGRAMME OFFER?

The standard duration of the programme is six semesters. In the first four semesters, you learn the fundamentals of the field, in particular mathematics, geodesy, building physics, chemistry for civil engineers, computer science in civil engineering, mechanics/statics, materials science, steel construction, timber construction and masonry, reinforced concrete construction, soil mechanics, construction engineering, and business economics. In addition, we place great value on practical application during studies and offer real, substantial exercises, practical work and excursions.

When you enrol in the programme, you choose one of the three areas of specialisation – Structural Engineering, Environmental Engineering or Building Material Engineering – which you will then study in the fifth and sixth semesters. It is possible to change your area of specialisation during the first four semesters.

In the area of specialisation of **Structural Engineering**, you will learn about reinforced concrete- and prestressed concrete construction, steel- and composite construction,

sustainable constructions, or the fundamentals of Finite Element Method (FEM). A significant pillar of the degree programme is the project-based course. The goal of the project-based course is a practical, holistic, interdisciplinary examination of constructions and their life-cycles in tandem with the acquisition of discipline-specific key qualifications, such as technical drawing, library research, scientific methodologies, presentation techniques and rhetoric. Working closely with academic staff, you will accomplish demanding and innovative planning tasks. The work you will complete on topics related to current research in the advanced semesters will prepare you as well for Master's Degree Programmes.

In the area of specialisation of **Environmental Engineering**, you will gain a more profound understanding of the core topics of this field. The core content includes the fundamental subjects of technical infrastructure, such as waste management and biological chemical process engineering, urban water management, traffic and foundation engineering. You will be trained as engineers responsible for conceptual planning, technical coordination of processes, and their respective technologies in the discipline of urban areas.

In the area of specialisation of **Building Material Engineering**, you will acquire the fundamentals of materials science, chemical analysis of materials, engineering petrography and mineralogy, timber and asphalt, metals and glass, ceramics and structural ceramics. We offer the ability to work independently in well-equipped materials-, chemistry- and physics labs and a comprehensive education in the areas of construction and raw materials. Core instructional content includes notable characteristics, processing options, and areas of application of raw materials such as metal, glass, ceramics, timber and synthetic materials, as well as knowledge about construction materials, such as binding agents (cement, plaster, asphalt), rocks, mortar and concrete.

Lectures are supplemented with practical training, in which you test materials using the most up-to-date methods and learn various analytical technologies, such as scanning electron microscopy (REM/ESM) and light microscopy, optical and acoustic particle size analysis, infrared spectroscopy, and chemical analyses.

You must complete a 12-week internship, before or during studies, as part of the Bachelor programme [Structures

Environment Building Materials]. You may complete the internship abroad or in Germany. As a rule, the internship must include six weeks' work on a construction site and in an engineering firm. Completed vocational training in a main construction trade or secondary construction work is accepted.

In the sixth semester, you will complete your studies with a Bachelor's thesis, which is bound with current research projects in the Faculty of Civil Engineering. You will receive competent and intensive mentoring.



HOW DO I APPLY?

If you are interested in technology, have a good grasp of mathematics and physics and have a university entrance qualification, you meet all the requirements for admission to this Civil Engineering degree programme. There are no admission restrictions. In order to help you choose the programme that is best for you, we have developed an online test. The test results remain anonymous and merely assist in self-assessment. They have no influence on registration.

Students may only begin the Civil Engineering bachelor's degree programme in the winter semester. For current information on application and enrolment deadlines and the possibility of applying online, please visit: **www.uni-weimar.de/online-application**. If you have any other questions, please feel free to contact our faculty advisors at: **fsb.bi@bauing.uni-weimar.de**.

WEIMAR FOR STUDENTS

In Weimar, there is a long tradition of venturing in new directions. In awareness of the historic accomplishments – Classicism, Bauhaus, German democracy – student life in Weimar is also anchored in its own contemporary microcosm. The cultural spectrum of the city is comprised of numerous small organisations, e.g. the student union in M18, the university gallery 'marke.6', the student-initiated soap box derby SpaceKidHeadCup.

Every two years, the Faculty of Civil Engineering organises the popular concrete-boat christening ceremony at the outdoor swimming pools at the Schwanseebad. Four cinemas, several small theatre venues, over 20 museums and diverse student clubs and concert events further enhance Weimar's reputation as a European capital of culture and contribute to an exciting and eventful student life. When you come to Weimar, you immediately notice its familiar, small-town feeling. Most places are close by and can be quickly and comfortably reached by bike or on foot. For more information about the opportunities awaiting you in Weimar, please visit: www.uni-weimar.de/weimar-for-students.

AND AFTER MY STUDIES?

As a structural engineer, you design the construction environment in an efficient and sustainable manner. You plan, design, construct and assemble buildings and structures. Our graduates are active in:

- _ Construction companies and engineering offices
- _ State and municipal administrative authorities
- _ Energy and water management companies
- _ Industrial and commercial firms
- _ Housing construction companies
- _ Companies and institutions in the environmental sector

In Germany or abroad, a Bachelor's degree in Civil Engineering [Environmental Engineering] opens up a variety of interesting professional fields, particularly in the fields of water and energy supply, waste and waste water disposal, urban and regional planning, transportation and mobility. Graduates are qualified for employment in the following areas:

- _ Engineering and planning offices
- _ State and municipal administrative authorities
- _ Foreign-aid organisations

- _ Utilities and waste disposal companies
- _ Universities and Research institutes
- _ Service providers in the field of urban development and city management

Building material science engineers are needed in the development, manufacture and production of construction- and raw materials. Our graduates are qualified to perform a variety of tasks, such as:

- _ Research and development in the entire field of building materials
- _ Production of building materials and the technology to manufacture them
- _ Building material testing, certification and quality assurance in construction
- _ Consulting in building materials and construction
- _ Building renovation
- _ Damage assessment and causal research
- _ Recycling and environmental protection
- _ Management and controlling in the field of building materials

After successfully completing the Bachelor's Degree Programme, students may apply for admission to the

consecutive master's degree programme in Civil Engineering, Building Material Engineering or Environmental Engineering at the Bauhaus-Universität Weimar, or another subject-related Master's Degree Programme.

DEGREE PROGRAMME CIVIL ENGINEERING (M.SC.)

This master's degree programme expands on the subject-relevant skills taught in the preceding undergraduate programme and provides students with scientifically based, interdisciplinary knowledge and methods. Graduate are qualified to carry out high-level engineering tasks in managerial positions in planning, constructing and finishing structures. In this intensively supervised, research-oriented programme, you have the opportunity to specialise and gain advanced professional expertise.

For more information, please visit:

www.uni-weimar.de/civilengineering.



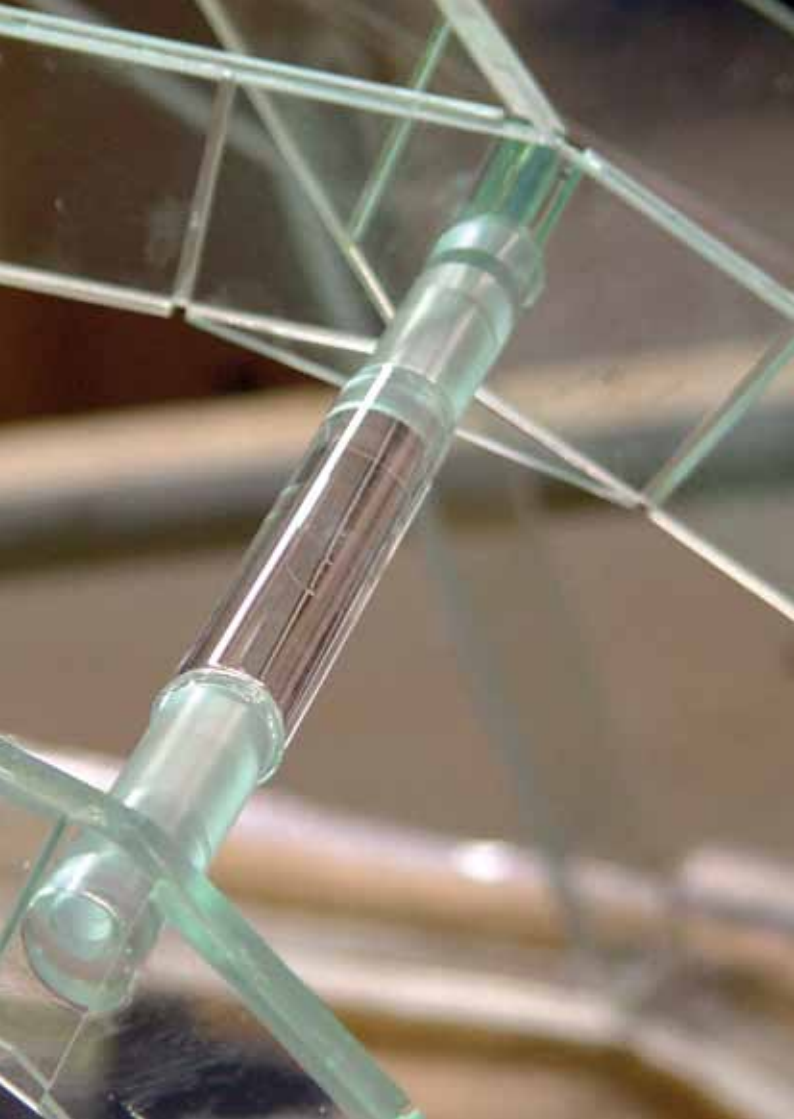
WHAT DOES THE PROGRAMME OFFER?

The standard period of study for this master's degree programme is four semesters. In the basic-study modules you learn general mathematic-scientific fundamentals and subject-specific content. Our compulsory elective modules include a wide range of subjects, enabling you to hone your skills and specialise in an area of interest. Additional elective modules allow you to attend any courses offered at the university which interest you, for example, language courses or design seminars in the Faculty of Architecture.

You can expect a well-rounded education, comprised of scientific and practice-oriented courses and may choose between two areas of specialisation: **Construction Engineering**, which covers civil engineering with application in industrial-, public-, bridge-, tunnel, and special-purpose construction, or the interdisciplinary specialisation **Archineering**. Here, civil engineering students expand their abilities by working on project modules in the Faculty of Architecture to accomplish creative, drawing- and practical design-oriented tasks.

As part of the programme's international orientation, several courses are taught exclusively in English. Furthermore, you may receive credit for coursework completed abroad if it is relevant to your degree programme.

During the fourth semester, you are required to write a master's thesis, supervised by a faculty member. The thesis should adequately demonstrate your ability to work in a scientific manner. After successfully completing and presenting your master's thesis, you will be awarded a »Master of Science« (M.Sc.) degree from the Faculty of Civil Engineering.



HOW DO I APPLY?

If you wish to deepen your knowledge of Civil Engineering after receiving your bachelor's degree, then definitely apply for admission to a master's degree programme at the Bauhaus-Universität Weimar.

The requirements for admission include an above-average final grade in a Civil Engineering bachelor's degree programme or subject-related first-level university qualification, for example, in a Civil Engineering subject or other technical-scientific subject. In some cases, applicants are required to complete an aptitude test and interview with the admissions board.

Students may begin the Civil Engineering master's degree programme in either the summer or winter semester. For current information on application and enrolment deadlines and the possibility of applying online, please visit: **www.uni-weimar.de/online-application**. If you have any other questions, please contact our faculty advisors at: **fsb.bi@bauing.uni-weimar.de**.

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AND AFTER MY STUDIES?

Well-trained civil engineers are in high demand in Germany and abroad. In their specialised fields, they are capable of analysing problems and offering solutions in an innovative, efficient and creative manner.

They frequently find employment at:

- _ Construction companies and engineering offices
- _ State and municipal administrative authorities
- _ Energy and water management companies
- _ Industrial and commercial firms
- _ Housing construction companies
- _ Companies and institutions in the environmental sector
- _ Universities, colleges and universities of applied sciences
- _ Non-university research institutes.

A successful, above-average completion of the Master's degree programme lays the foundation for admission to a doctoral programme here or abroad.

General Academic Advising

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99423 Weimar

phone: +49 (0) 36 43/58 23 23

e-mail: study@uni-weimar.de

Information and office hours:

www.uni-weimar.de/academic-advising

Faculty Advising

e-mail: fsb.bi@bauing.uni-weimar.de

Subject to change. For updates, please check the university website.

www.uni-weimar.de

Bauhaus-Universität Weimar _ **Editor:** Claudia Goldammer

Typesetting: University Communications _ **Images:** das schmott (title),

Norman Hallermann (page 5), Candy Welz (page 10), Hamish John

Appleby (page 20), Holm Friedrich (page 23) _ **Print:** Gutenberg

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