



HAW
HAMBURG

FACULTY LIFE SCIENCES

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Impressum:
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Faculty Life Sciences
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Dear Readers,

With this Brochure we would like to introduce you the Faculty of Life Sciences at the Campus Bergedorf.

The Faculty of Life Sciences offers degree programs, which connect directly to the fundamental living conditions of mankind. The Faculty offers a wide spectrum of majors ranging from health and nutritional food sciences to engineering disciplines. These majors/subjects contribute to some of the most important topics related to future of Hamburg City.

Biotechnology, environmental protection, nutrition, health, hazard control, as well as biomedical, process and rescue engineering affect many people and contribute considerably to the development of our society. Technology provides us with the knowledge needed to design, build and operate devices and equipment required for scientific advances.

The interdisciplinary orientation of our program strengthens the interconnection between courses as well as enhances teaching and research.



Applied sciences and close contact to the business sector provide us with a lot of new ideas for the continuous development of our programs' content. We have strong and longstanding relations with other scientific institutions in and around Hamburg City. We appreciate your interest and hope you enjoy reading.

Prof. Dr. Heinrich-Andreas Biesterfeld
Dean of the Faculty of Life Sciences

Biotechnology / Pharmaceutical Biotechnology

Bachelor / Master of Science

Biotechnology- a Technology of the Future

“Biotechnology is booming”, “growth industry biotechnology”, “biotech – a job generator” are common headlines these days. By 2020, the number of people with biotechnology –related jobs will exceed the current number of employees, approximately 440,000, in the entire chemical sector of Germany. Biotechnological techniques increasingly refine food products and pharmaceuticals. Moreover, many manufactured products use biotech materials. It is estimated that by 2018, 50 percent of all pharmaceuticals will be produced through biotechnological methods. Without biotechnology, many forms of regenerative energy would be impossible. Microorganisms work to remove soil and water contaminations. They produce antibiotics, insulin, and other synthesized protein as well as fuels like

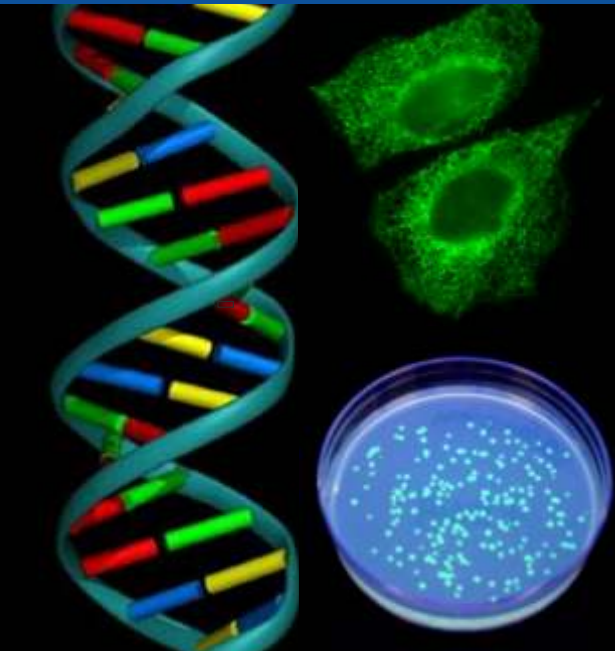
biogas and bioethanol or biodegradable plastics. Testing on cell cultures are replacing tests on laboratory animals. These tests produce vital drugs and tissues employed for replacement of burned skin and damaged joints.

Molecular biological techniques also allow for reliable diagnostics, e.g. the identification of a criminal using hair. In industrial processes, microorganisms and cells are cultivated in bioreactors, in which optimized conditions are produced by bioprocess engineering. Through modern automation technology, bioprocesses are controlled on a reproducible basis and geared to the highest performance.

After conditioning the cell mass and purifying the product with chromatographic columns, marketable products evolve to satisfy the highest quality standards.

Biotechnology / Pharmaceutical Biotechnology

Bachelor / Master of Science



Biotechnology / Pharmaceutical Biotechnology

Bachelor / Master of Science

Fields of Activity for Biotechnology Engineers

- Production of medications and chemical raw materials with bacteria, yeasts, plant and animal cells
- Cultivation of cells for new ones therapy forms
- Development of immunological and molecular biological testing systems
- Analytical and diagnostic services in the medical / pharmaceutical sector
- Biotechnological energy production, from biomass or energy crops
- Activities with authorities in the environment and hygiene industry
- Marketing and sales of equipment and accessories

Features of the Degree Program

- Internationally recognized degree Bachelor of Sciences (B.Sc.)
- Program duration: 3,5 years
- Modularization according to 210 CP
- Begin of studies in winter or summer semester
- Integrated internship (at home or abroad)
- Possibility of further qualification Master of Science (M.Sc.) program

Contact

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Biotechnology / Pharmaceutical Biotechnology

Bachelor / Master of Science



Health Sciences

Bachelor

Health Sciences – a Rapidly Growing Sector

The objective of the Health Science Degree program is to provide students with comprehensive qualifications in health science, predominantly in the area of public health.

The graduates will be able to successfully and responsibly carry out projects and fulfill management functions in a broad range of areas in the health care system and in the growing health care market.

The students will acquire the technical and methodological expertise necessary for a professional career as well as the capacity to perform scientific work and make socially responsible decisions.

The interdisciplinary Health Science Program prepares students for various tasks in the health care systems such as health promotion, protection, epidemiology, health care policies and economics.

Features of the Degree Program

- Internationally recognized degree Bachelor of Sciences (B.Sc.)
- Program duration: 3 years
- Modularization according to 180 CP
- Internship of 4 months in the third year
- Study abroad possibilities at partner universities
- Possibility of further qualification – Health Sciences master program

Health Sciences

Bachelor

Areas of Interest

- Planning and carrying out studies as well as analyzing and interpreting health related data
- Development, implementation, and evaluation of measures to modify behavior and structural conditions aiming at the improvement of individual, group, and population health
- Collaboration in projects and management of organizations and institutions in the health, social, education, and environment sector

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Health Sciences

Master of Science

Master Health Sciences – The Science behind Public Health

The goal of this degree program is to educate professionals and executives for the increasing demand of emerging health care market and research institutes.

The aim of the course is to educate professionals and executives for the increasing demand of emerging healthcare markets. Applicants considering this Master's program should have obtained a Bachelor's degree in Health Sciences or related fields.

The Masters degree will qualify students for research in epidemiology as well as professional and executive positions in insurance companies, hospitals, public health advising, and research institutes. The program procures professionally relevant qualifications for health science occupations. Students will assimilate the expertise to solve complex problems with scientific methods and advance past current limitations.

Features

The Health Science Master Program is research orientated.

- Program duration: 2 years (120 Cps)
- 25 applicant slots
- Interdisciplinary and modular
- Methods and practice-oriented: well-founded method-finding in a practical example
- Possibility for personal advancement: 22 week research project/ 1 Semester Master's thesis
- International degree: courses taught in English with the possibility to study abroad
- Double degree in in cooperation with Lille University in France is possible

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Public Health

Master

Master Public Health - MPH

The Master of Public Health aims to equip participants with scientific and practical skills to independently conduct research that brings about policy changes and positively affects the health of populations.

Well trained health professionals are needed to meet the growing demand within the changing field of public health. Target groups of the Master of Public Health (MPH) programme are postgraduates, seeking for responsibility and leadership in specialized areas of public health including social, educational and environmental settings. Programme participants will be trained for positions in public administrations, health insurances, hospitals, professional associations, health research and surveillance institutions. Health promotion and prevention, health economics and management are

other specialized capacity domains within public health.

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Biomedical Engineering

Bachelor / Master of Science

Biomedical Engineering – a Technology of the Future

Medical technology is a growth sector and offers a wide range of career opportunities at home and abroad. In medical technology, both medical and engineering sciences are combined to improve the diagnosis and treatment of diseases.

Examples of medical devices range from imaging diagnostic methods such as magnetic resonance tomography, minimally invasive surgical techniques (eg laparoscopy) to health care (eg digital hospitals).

New discoveries, for example in nanotechnology, biotechnology or bioinformatics, lead to ever new approaches to solutions. Medical engineers and engineers work in research and development, carry out clinical trials and take over tasks in product management and much more.

Features of the Degree Program

- Internationally recognized degree Bachelor of Sciences
- Program duration: 3.5 years
- Modularization according to ECTS (210 Cps)
- Begin of studies in winter or summer semester
- Integrated internship (at home or abroad)
- Possibility of further qualification – Master of Science (M.Sc.) program
- Courses for management and human resources management
- Deepening possibilities or optional courses
- Selected courses are taught in English

Biomedical Engineering

Bachelor / Master of Science



Fields of Activity for Biomedical Engineers

- Marketing, product management, distribution
- Therapy and treatment
- Project management
- Research and discovery
- Industrial safety officer
- Maintenance and repair
- Medical data management
- Quality management
- Medical data management
- Hospital planning und -facility

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Rescue Engineering

Bachelor of Engineering

Rescue Engineering

Rescue Engineering as an integral part of the non-police security service deals with acute damage situations in which people are involved. The spectrum ranges from medical emergencies to natural catastrophes.

Rescue engineers and engineers are specialists in prevention, organization and management. They design new rescue means (for example, for offshore wind energy), implement crisis management systems (for example, for airports or public buildings) and create personnel and organizational prerequisites for dealing with major damage events with mass incidents of injured persons at the municipal or supraregional level.

Recent experiences in the context of natural and civilizing disasters demonstrate prove the importance of modern rescue and crisis management. Rescue engineers are resident in rescue organizations, usually as managers, self-employed as consultants, enter the service of an authority with order and safety tasks (BOS), or work in engineering consultants.



Rescue Engineering

Bachelor of Engineering

Features of the Degree Program

- Degree in Bachelor of Engineering (B.Eng)
- Duration of program: 3.5 years
- Modularization according to ECTS (210 Cps)
- Begin of studies each year in summer semester
- Integrated internship (at home or abroad)
- Deepening possibilities or optional courses
- Practical reference through various cooperation partners

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Fields of Activity

- Line functions e.g.in the rescue service or in international relief organizations
- Planning and implementation of resources and procedures of preclinical care
- Security and risk management of large events or facilities large public transport (e.g., airports)
- Advisory and expert activities (e.g., for municipalities, rescue companies, Engineering consultants)
- Research and development (eg equipment and procedures for emergency rescue)

Rescue Engineering

Bachelor of Engineering



Hazard Control

Bachelor of Engineering

Hazard Control - Modern Prevention Methods

Hazard Control Engineers improve help to increase the resilience of social systems to the uncontrolled release of hazards (chemical, biological, radiological, nuclear, etc.).

This includes a wide range of activities the preventive fire protection and operational hazardous material management as well as the management of damage situations with suitable equipment and tactics (e.g. fault management, fire control). Climate change and the resulting extreme weather or the risk of terrorist attacks also make the protection of the population an increasingly important task area for hazard control engineers.

Graduates of the course are typically found in the BOS, in companies (for example, fire brigade,

security department) or in engineering firms (e.g. fire prevention). The study qualifies for management tasks and can also be the basis for self-employment as a consultant.



Hazard Control

Bachelor of Engineering



Hazard Control

Bachelor of Engineering

Features of the Degree Program

- Degree in Bachelor of Engineering (B.Eng)
- Duration of program: 3.5 years
- Modularization according to ECTS (210 Cps)
- Begin of studies each year in winter semester
- Integrated internship (at home or abroad)
- Deepening possibilities or optional courses
- Practical reference through various cooperation partners

Contact

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Fields of Activity

- Application guidance / support (eg at the Fire brigade or disaster control)
- Prevention measures (e.g. agencies and offices with security measures)
- Safety and risk management in industries, utility and transport companies
- Advisory and expert activities (e.g. for insurance companies, architectural offices)
- Research and development (e.g. Fire and safety engineering)
- Specialist journalism and public relations

Hazard Control

Bachelor of Engineering



European Master Medical Technology and Healthcare Business (EMMaH) Master of Science

European Master Medical Technology and Healthcare Business

One international master programme, at three universities of applied sciences, in three European countries – EMMaH.

- *1st Semester* Germany - Hamburg University of Applied Sciences, Faculty Life Sciences
- *2nd Semester* Portugal - Porto Escola Superior de Tecnologia da Saúde do Porto
- *3rd Semester* France - Lille Université de Lille II Faculté Ingénierie et Management de la Santé

International studies – training in technology, clinics and business management. In addition to professional, you also acquire methodological and personal competence in the European environment. Our students acquire practice based engineering and research skills which enable them to participate in the development and improvement of technical

and organizational health care solutions. The programme stresses inter-professional collaboration (e.g. interacting with physicians, nurses, therapists and technicians). The degree “Master of Science” qualifies for positions in research and development and delivers skills required for scientific work up to postgraduate programs (e.g. PhD, Promotion).

Features

- Program duration: 4 Semester (120 CP)
- Language: English B2, German 200 Hours
- Application period: June 1st - July 15th
- more Information www.emmah.eu

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European Master Medical Technology and Healthcare Business (EMMaH) Master of Science



Nutrition and Home Economics

Bachelor of Science

Nutrition and Home Economics- Health Services and Consulting

The program prepares students to plan and manage production and operational procedures in the food industry, to provide nutritional counseling, to mediate consumer information, as well as develop and test food, equipment, and manufacturing. Furthermore, student will be capable of marketing pertinent products and organizing services. Because of the interdisciplinary nature of the program, graduates will be suitable for careers in different service areas and manufacturing sectors.

The foundation of the program incorporates a wide range of scientific subjects including natural, social and economic sciences as well as food sciences, nutrition, quality and project management.

The program offers a choice of concentrations within

nutrition and home economics, which include:

- Nutrition and health
- Food product and marketing
- Food safety and supply

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Nutrition and Home Economics

Bachelor of Science



Nutrition and Home Economics

Bachelor of Science

Features of the Degree Program

- Internationally recognized Bachelor of Sciences Degree
- Program duration 3 years
- Modularization according to ECTS
- Program begin in summer and winter semester
- Orientation week and freshman seminars for a successful start
- International semester with selected courses in English
- Integrated internship (at home or abroad)
- Possibility of further qualifications – Food Science Master

Fields of Activity

■ Nutrition and health

Doctor offices, health clinics and - insurance
Companies, organizations, self-help groups
Nutrition and pharmaceutical industry

■ Food product and marketing

Food industry and trade
Sensor technology and consumer research
Public relations and advertising

■ Food safety and supply

Authorized food monitoring
Food industry and trade
Population nutrition and resources

Nutrition and Home Economics

Bachelor of Science



Food Science

Master of Science

Food Sciences – a Holistic Approach to Food

Food Science is a research and experience orientated program. It provides interdisciplinary knowledge on the processing and production of food. The focus is on the entire food chain, from crops to packaged food, taking into account technological, economical, environmental, and sensory aspects.

The interdisciplinary focus provides graduates with the skills necessary to moderate between different departments and to coordinate activities

Fields of Activity

- Food industry
- Research and development
- Marketing and marketing

Target Audience/ Prerequisites

Bachelors Degree in one of the following:

- Nutrition and Home Economics
- Process Engineering
- Biotechnology
- Food Chemistry
- Food Sciences
- Related Degree
- Practical experience, minimum 18 weeks in one of the disciplines above
- Good German/English language skills

Features of the Degree Program

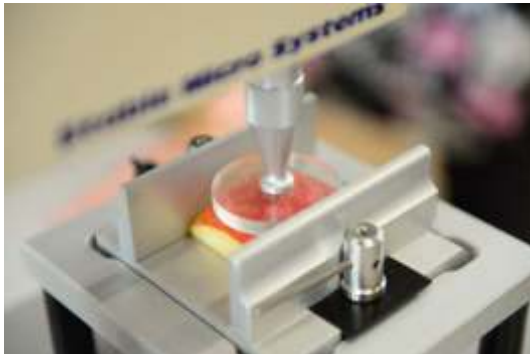
- Program duration: 2 years
- Internationally recognized degree in Master of Food Sciences (M.Sc.)

Contact

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Environmental Engineering

Bachelor of Science

Environmental Engineering – an Innovative Growing Market

German environmental technology has an excellent reputation worldwide. Its mission is to guarantee environmental sustainability for the rapidly growing world population and to minimize or prevent environmental damage.

Technologies, equipment and procedures must be developed to resolve existing damage to the water, soil, and atmosphere in a non-invasive manner. A sustainable energy economy, chemical analysis, and operational environmental management are topics of central importance. A high level of interdisciplinary knowledge is indispensable for a profession in environmental engineering.

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Environmental Engineering

Bachelor of Science



Environmental Engineering

Bachelor of Science

Features of the Degree Program

- Internationally recognized degree Bachelor of Science (B.Sc.)
- Program duration: 3.5 years
- Modularization according to 210 CPs
- Program begin in summer and winter semester
- Profound number of practical training in modern laboratories
- Integrated internships (at home or abroad)
- Possibility of further qualification – Master of Science (M.Sc.) in Environmental Engineering in the Faculty of Life Sciences
- Selected courses are taught in English

Fields of Activity

- Planning and monitoring of wind parks, biogas plants and solar plants
- Consulting for large companies
- Implementing and evaluating measurements to assess water and air quality for large companies and public agencies
- Developing and marketing of measurement and analysis equipment
- Assessment of energy and material balance for manufacturers and public agencies
- Develop concepts and technical measures for environmentally friendly production, energy savings and reduction of waste and

Environmental Engineering

Bachelor of Science



Process Engineering – an Innovative Technology for the Future

The majority of industrial products are manufactured with techniques developed by process engineers. Process engineers take on a wide range of tasks including research and development, planning and construction, operations and production, marketing and services, teaching and training, patents and software development.

Process engineers develop, implement and operate manufacturing processes in which high-quality, specialized products are produced from raw materials using chemical processes.

Process engineering is necessary to solve urgent problems affecting the future. Additional advances are needed in the areas of renewable resources, recycled air, water purification, soil remediation, waste recovery, environmental protection and food technology.

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Process Engineering

Bachelor of Science



Features of the Degree Program

- Internationally recognized degree Bachelor of Sciences (B.Sc.)
- Program duration: 3.5 years
- Modularization according to 210 CPs
- Program begin in winter or summer semester
- Integrated Internship (at home or abroad)
- Individual areas of specialization
Possibility of further qualification –
Master of Science (M.Sc.)

Fields of Activity

Planning, development, and marketing of plants in the areas of:

- Device and plant construction
- Biotechnology
- Chemistry and offshore technologies
- Food and pharmaceutical industries
- Energy engineering
- Environmental engineering



Process Engineering

Bachelor of Science



Process Engineering – an Innovative Technology for the Future

This full-time study program is designed for 3 semesters and covers mathematical, scientific and engineering knowledge and comprehension with emphasis on digitalization / industry 4.0. Non-technical skills focus on asset management and project management as well as project finance.

Most lectures and seminars are complemented by associated practical courses with up-to-date software tools and experiments in on-site laboratories.

Students are engaged to deepen their gained competences in a scientific project in small groups. Enhanced soft skills are acquired in the seminars and during the lectures through intense discussions and small projects like the preparation of presentations, posters and papers.

Students are enabled to design and optimize processes and to plan, construct, operate and maintain process plants. They can define and perform experiments, select, handle and interpret data as well as perform numerical simulations. They learn to evaluate the effect of the systems on the environment, taking into account technical, social, economic and environmental considerations.

Contact

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Process Engineering

Master of Science



Growing Market for Renewable Energy

With rising demands for energy and increasing effects of global warming caused by the emission of greenhouse gases, reliable techniques and perspectives are required to develop and implement sustainable energy sources. Managing the high demand for renewable energy has become a vital role. In the past few years, the industry for renewable energy has shown steady growth and sales.

Features of the Degree Program

- Program duration: 3 Semesters
- Courses offered in English

Fields of Activity

- Planning and designing solar power plants, wind energy plants, and production plants for biogas or biofuels
- Networking of energy production systems as well as plan and configure downstream processes for additional energy conversion
- Research and Development of technical components and systems for renewable energy
- Operation and integration of regenerative and hybrid energy systems into existing networks
- Assessment and management of sustainable energy projects

Renewable Energy Systems / Environmental & Process Engineering

Master of Science





HWI HAMBURG

HOCHSCHULÜBERGRIFFENDER STUDIENGANG
WIRTSCHAFTSINGENIEURWESEN HAMBURG

Industrial Engineering – a Broad Spectrum

The program features range from engineering design and technical quality assurance to controlling and marketing. There is no “typical” career path.

A large number of graduates start their careers at consulting firms, where they apply and expand their abilities to analytically evaluate business processes. After several years of professional experience, many industrial engineers take on leading positions at medium-sized or large companies. Other graduates start their own IT firms, manufacturing companies, etc.

The HWI is an interuniversity, industrial engineering program directed by two universities, the University of Hamburg and the Hamburg University of Applied Sciences. The Master Program includes a third partner university, the Helmut- Schmidt University (University of the Federal Armed Forces Hamburg).

This partnership offers students a wide, attractive range of courses and allows students to specialize their course of study based on their individual desires and professional ambitions as industrial engineers.



HWI HAMBURG





HWI HAMBURG

HOCHSCHULEBERGREIFENDER STUDIENGANG
WIRTSCHAFTSINGENIEURWESEN HAMBURG

Features of the Degree Program

- Internationally recognized degree
Bachelor of Science (B.Sc.)
- Program duration: 3 years
- Modularization according to 180 CPs
- Program begins each year in the winter semester
- Integrated internship (at home or abroad)
- Choice of specialized concentration
- Individual student projects
- Before applying, mandatory to utilize the virtual course-guidance tool
www.haw-navigator.de/hwi

Fields of Activity

- Key positions between businesspeople and engineers
- Consulting
- Technical sales and marketing
- Management of technically-orientated businesses

Contact

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More Information

www.hwi-hamburg.de
www.wiing-aktiv.de



HWI HAMBURG



Applying as a guest student to the HAW Hamburg

Winter semester (Sept. - Feb.) Application deadline: 30. April

Summer semester (March - July) Application deadline: 30. October

These time frames are binding.

Applications are not possible at any other time.

Application time frame for national students

Application deadlines

For the summer semester 1 December to 15 January

For the winter semester 1 June to 15 July

These time frames are binding.

Applications are not possible at any other time.



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