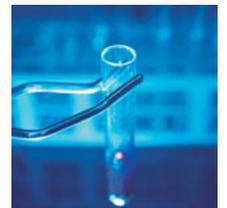


Economics and Science right up to date

Life Sciences in Giessen



Medical Technology
Medicine/Pharmacy
Biotechnology
Environmental Technology

Location in Motion

www.giessen.de



Fifteen good reasons!

Life Sciences is a forward-looking area of research and economics in Giessen.

The interdisciplinary sciences, procedures, products and services are all represented with the emphasis on medical technology, biotechnology, environmental technology and pharmacy. Giessen offers conditions that are second to none, namely:

- 1** Giessen has the highest density of students in Germany with a total of nearly 30.000 at the two universities. These are the Justus-Liebig University and the University of Applied Sciences (Fachhochschule).
- 2** About 50% of the students have enrolled in scientific and medical subjects.
- 3** The university provides a unique combination of subjects in the faculties of "classical" sciences like human and veterinary medicine, agricultural sciences, nutritional sciences and environmental sciences, thus ensuring that the life sciences have a broad basis.
- 4** A biomedical research centre is being built, to be completed by 2011 as a central infrastructure in the field of life sciences.
- 5** Nanotechnology at the universities and their associated departments attains a central significance as an interface technology.
- 6** The Fraunhofer project group "bioresources" was created at the university in 2009, aiming at locating a Fraunhofer institute here.
- 7** The University of Applied Sciences Giessen-Friedberg with its institutes "Biomedical Technology - Bioengineering and Imaging" was the only University of Applied Sciences in Hessen to be granted sponsorship in the programme "Landesoffensive zur Entwicklung wissenschaftlich-ökonomischer Exzellenz (Loewe)" which is an excellence initiative to encourage innovative and excellent projects.
- 8** A user centre for research projects between the University of Applied Sciences and businesses that work together with the university is created and called "Industry on Campus".
- 9** The transfer of technology is supported by efficient institutions like TransMIT GmbH, the Transfer Centre Mittelhessen and many other networks like "timm" which stands for Technology and Innovation, Medical Region in Central Hesse.
- 10** 23 TransMit-Centres in the field of life sciences provide businesses with access to universities and products; scientists can also put their products and services on offer in a professional setting.
- 11** One of the best patent user agencies in Germany (TransMIT GmbH) is located here.
- 12** To encourage innovative and technology oriented businesses two regional companies (RegioMIT, Mittelhessen-Fonds) are available that offer shares to replace own capital.
- 13** The first privatised university teaching hospital Giessen-Marburg creates new perspectives with an investment volume of 370 mill. Euros.
- 14** The concept put forward by the City of Giessen's Department of Economic Promotion (Wirtschaftsförderung) for investors and those wanting to found businesses won awards on two occasions.
- 15** Giessen has been awarded the title "City of young Researchers" for 2010.



Focus Medical Technology

Study courses 2008/2009

Biomedical technology at the
University of Applied Sciences (FH)
341 students

Hospital technology management at
the University of Applied Sciences (FH)
163 students

Companies

Biomedis GmbH
deltaT - Gesellschaft for
Medizintechnik mbH
First Soft GmbH & Co. KG
Gammex-RMI GmbH
HBG Henneberg - Sander GmbH
LEA Medizintechnik GmbH
Mebitec GmbH
medDV GmbH
Mettler-Toledo GmbH
Milenia Biotech GmbH
Thomas Recording GmbH



Research Centres

- Laboratory for experimental accident surgery (University)
- Micro- and nanostructuring laboratory run by the work group Material sciences (University, Nano network Hessen)
- Competence Centre Medical and Hospital Technology (University of Applied Sciences)
- Competence Centre Nanotechnology and Photonics (University of Applied Sciences)
- Competence Centre Optical Technologies and Systems (University of Applied Sciences)
- Institute for Medical Physics and Radiation Protection (University of Applied Sciences)
- Research Operating Theatre (University of Applied Sciences)

TransMIT-Centres (Technology transfer)

- TransMIT-Centre for Medical Technology
- TransMIT-Centre for Bioprocess Technology, Membrane Technology, Cell culture Technology and Tissue Engineering Bioartificial Organs
- TransMIT-Project area for accompanying procedure in reproduction medicine
- TransMIT-Project area for cerebrovascular diagnostics
- TransMIT-Centre for Hygiene and Technical Health Studies
- TransMIT-Centre for Medical Physics and Medical Informatics
- TransMIT-Centre for Haemotherapy and Transfusion Medicine

Products, procedures and research projects

- Fiberglass-Metal-Micro-electrodes
- Cardiac Pace Maker
- Bone Replacement
- Equipment to measure oxygen saturation
- Precision Scales
- Cooling systems (intelligent solutions to transport blood)
- LOEWE research project Biomedical Technology Bioengineering and Imaging (University of Applied Sciences)
- Development of a transportable bioreactor to cultivate cell cultures and micro organisms during transport (University of Applied Sciences)
- Development of a procedure to recognise in-vivo the material composition in a target area during an endoscopic stone destruction (University of Applied Sciences)



Focus Medicine/Pharmacy

Study courses 2008/2009

Medicine (University)
2400 students

Veterinary Medicine (University)
1443 students

Dentistry (University)
375 students

Biotechnology/Biopharmaceutical
Technology (University of Applied
Sciences)
352 students

Companies

Alcedis GmbH
Esculap Klinik GmbH & Co. KG
Institute for Hospital Hygiene and Infection Control (Krankenhaushygiene und Infektionskontrolle) – iki GbR
Lilly Pharma GmbH & Co. KG
Pascoe GmbH
University Clinic Giessen and Marburg GmbH
Society for Wound Healing and Treatment



Research Centres

- LOEWE-Centre UGMLC (Universities of Giessen and Marburg Lung Center)
- Excellence cluster Cardio-Pulmonary System - ECCPS (University)
- Research Group (KFO118) Pathomechanismen und Therapy of Lung Fibrosis (University)
- Research Group (KFO 181) Male factor infertility due to impaired spermatogenesis (University)
- Biomedical Research Centre Seltersberg - BFS (2011, University)
- Biochemical Institute (University)
- Bender Institute of Neuroimaging (B.I.O.N.) (University)
- Centre for Clinical Chemistry, Clinical Immunology and Human Genetics (University)
- Centre for Medical Microbiology and Virology (University)
- Institute of Pharmacology and Toxicology (University)
- Institute of Virology (University)
- Rudolf-Buchheim-Institute of Pharmacology (University)
- European Network (IPF) Idiopathic Pulmonary Fibrosis (University)
- Cystic Fibrosis Centre – Paediatric Pneumology and Allergology, (University Clinic Giessen and Marburg GmbH)
- Giessen Research Centre for Infectious Diseases - GRID (University Clinic Giessen and Marburg GmbH)
- Child Heart Transplantation Centre (University Clinic Giessen and Marburg GmbH)
- Centre for Reproductive Medicine in Hessen (University Clinic Giessen and Marburg GmbH)
- Competence Centre Medicine and Hospital Technology (University of Applied Sciences)
- Institute of Biopharmaceutical Technology (University of Applied Sciences)
- Institute of Biochemical Procedures and Analyses (University of Applied Sciences)
- Institute of Medical Physics and Radiation Protection (University of Applied Sciences)

TransMIT-Centres (Technology transfer)

- TransMIT-Centre for Biopharmaceutical Technology
- TransMIT-Project area for Neuronal Ion Channels
- TransMIT-Project area for Functional and Pharmacological Ion Channel Research
- TransMIT-Project area for Oral Biology, Implantology and Paradontology
- TransMIT-Project area for Pharmacogenetical Diagnostics (PGvet)
- TransMIT-Project area for Virus hepatitis
- TransMIT-Project area for Male Fertility
- TransMIT-Project area for Innovative Therapies in Pneumology

Products, procedures and research projects

- Dermatological products
- Natural medicine
- Approaches in treatment of diseases of the lung and respiratory organs (University)
- Tissue Engineering – Development of therapy offers to treat large cartilage defects (University Clinic Giessen and Marburg GmbH)
- LOEWE-Research Focus Biomedical Technology – Bioengineering & Imaging (University of Applied Sciences)
- Development of galenic forms as carriers for compatible solutes to apply on irritated skin (University of Applied Sciences)
- Development of a highly sensitive diagnosis system to analyse drug and infection in mobile assignments out of hospital (University of Applied Sciences)

Focus Biotechnology

Study courses 2008/2009

Agrobiotechnology, international master study programme (University)
40 students

Biology (University)
1047 students

Chemistry (University)
352 students

Food Chemistry (University)
60 students

Biotechnology/Biopharmaceutical Technology (University of Applied Sciences)
352 students

Companies

BJ-Diagnostik GmbH
ScheBo Biotech AG
Thomas Recording GmbH
Trinova Biochem GmbH
University Clinic Giessen and Marburg GmbH



Research institutions

- Interdisciplinary Research Centre for Bioscientific Basics of Environmental Protection - IFZ (University)
- Research Group (FOR 666) – Mechanisms of compatibility: Reprogramming of plant metabolism by fungal effector molecules (University)
- Transfer area (TFB 299) – Integrated Evaluation of Energy plant growth (University)
- Biomedical Research Centre Seltersberg – BFS (2011, University)
- Institute of Pathology (University)
- Institute of Biochemistry (University)
- Institute of Food Chemistry and Food Biotechnology (University)
- Institute of Anatomy and Cell Biology (University)
- Institute of Botany (University)
- Physiological Institute (University)
- Fraunhofer Project group Bioresources (University with strategic alliance to Fraunhofer -Society)
- Competence centre Biotechnology und Biomedical Physics (University of Applied Sciences)
- Institute of Biopharmaceutical Technology (University of Applied Sciences)

TransMit-Centres (Technology transfer)

- TransMIT-Centre for Bioprocess Technology, Membrane Technology, Cell Culture Technology and Tissue Engineering Bioartificial Organs
- TransMIT-Centre for Protein-Engineering & -Analysis
- TransMIT-Centre – Institute of Biometric Identification Systems
- TransMIT-Project area for Food Quality and Safety
- TransMIT-Project area for Medical Microbiology

Products, procedures and research projects

- Diagnostics oncology
- Food analysis, food technological procedures
- Bioresources – New substances for medicine, plant protection and food biotechnology (University)
- Cell-therapeutic procedures in the field of immunology/Transfusion medicine (University clinic Giessen and Marburg GmbH)
- Stem cell research to develop a cell culture model to investigate tumor-induced growth of blood vessels (University)
- BMBF-project „Anthocyane in Fruit Juices made of Berries“ (University)
- LOEWE-Research Project Biomedical Technology Bioengineering & Imaging (University of Applied Sciences)
- Development of a production system to produce transplant for cell therapy (University of Applied Sciences)
- Tissue Engineering – Production of reimplantable cartilage (University of Applied Sciences)

Focus Environmental Technology

Study courses 2008/2009

Various study programmes leading to bachelor or master's degree in the following areas:

Agrarian Sciences (University)
197 students

Nutritional Science (University)
517 students

Nutritional Science
(incl. biochemistry, food technology, molecular nutrition research, University)
829 students

Environmental and Resource Management (University)
284 students

Oenology (University)
29 students

Physics (University)
289 students

Material sciences (University)
72 students

Environment, Hygiene and Safety Technology (University of Applied Sciences)
289 students

Companies

HG Hydrogeologie und Umwelt GmbH
Poppe + Co. GmbH & Co. KG
UBERA GbR



Research Centres

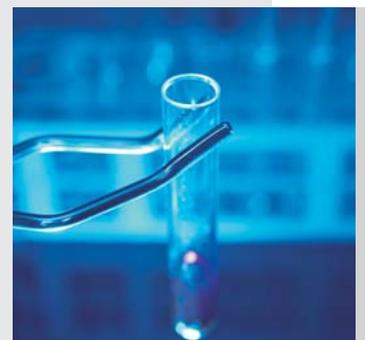
- Interdisciplinary Research Centre for bioscientific basis of environmental sustenance - IFZ (University)
- Centre for International Development and Environmental Research - ZEU (University)
- LOEWE- Research Project on Mass Spectrometrical in-situ-Analysis for Areas of Health and Environment, Climate and Safety – AmbiProbe (University)
- Laboratory for Material Research – LAMA (University)
- Centre for Ecology (University)
- Institute of Agricultural and Environmental Policy (University)
- Institute of Applied Microbiology (University)
- Institute of Soil Science and Soil Conservation (University)
- Institute of Landscape Ecology and Resource Management (University)
- Institute of Agronomy and Plant Breeding (University)
- Institute of Plant Nutrition (University)
- Institute of Plant Ecology (University)
- Institute of Phytopathology (plant pathology) and Applied Zoology (University)
- Transfer Area (TBB 299) Integrated Evaluation of Energy Plant Cultivation (University)
- Competence Centre Energy and Environmental System Technology (University of Applied Sciences)

TransMIT-Centres (Technology transfer)

- TransMIT-Centre for Waste, Environment and Resource Management
- TransMIT-Project Area for Phytosensor-Technology
- TransMIT-Project Area for Water Recycling and Waste Water Technology

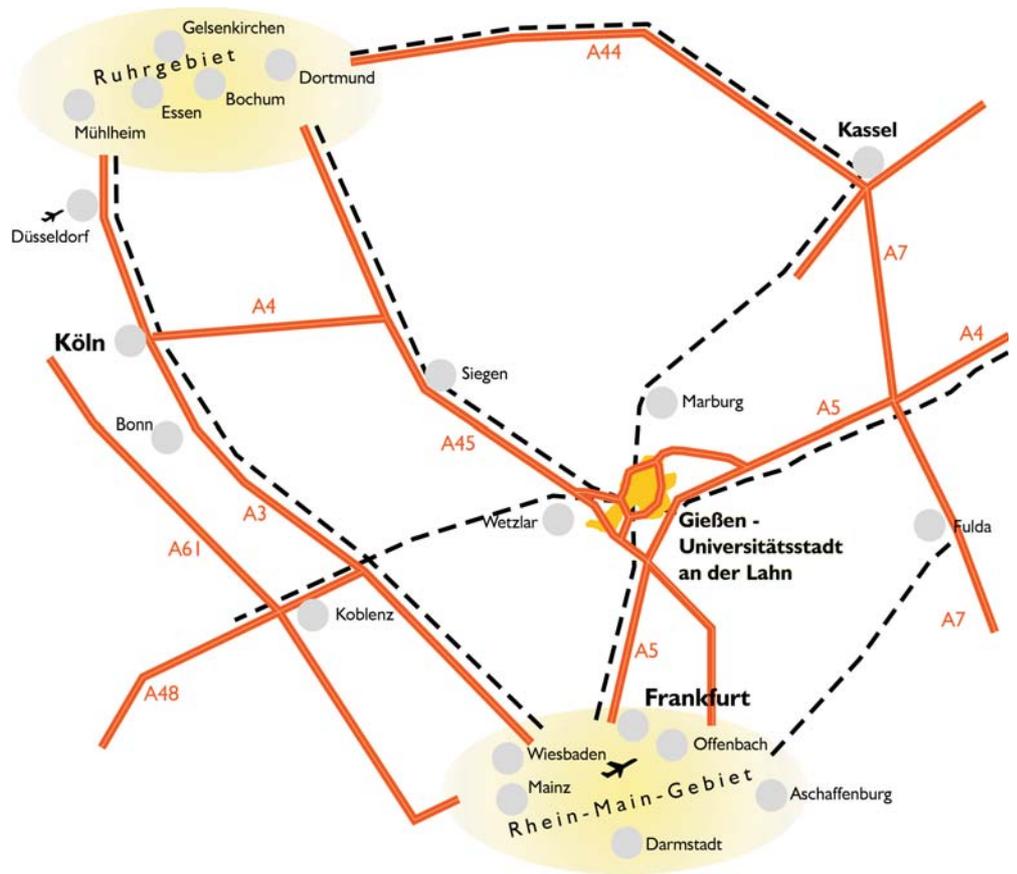
Products, Procedures and Research Projects

- Disposal procedures for insulation materials
- Analyses and reports on space
- Alternatives to obtaining crude oil and active coal
- Micro- and nanoanalysis (University)
- Chemical methods for health, environment, climate and safety (University)
- Resource potentials of domestic waste dumps (University)
- Mass spectrometric procedure for 3D-imaging and in-vivo-analysis of biological tissue (University)
- Improving energy efficiency of sewage plants (University of Applied Sciences)
- Decentralised anaerobic filtration of waste water to create biogas as an energy carrier using membranes to separate biomass (University of Applied Sciences)
- Energy obtained from waste water: Conditions to use heat and sillage in Hessen (University of Applied Sciences)
- Thermocatalytic loop-type bubble column development: Demonstration plant for use of raw materials and energy of biogenic residue (University of Applied Sciences)
- Separate documentation, treatment and use of urine and sillage (University of Applied Sciences)
- Procedural development for Bioindicators for Environmental control of heavy metal pollution (University of Applied Sciences)



Giessen's location is central in Germany

- Giessen's location is central in Europe, Germany and Hessen.
- You can drive to Munich, Hamburg and Berlin in four to five hours.
- The Rhein-Main area and Frankfurt/Main airport are about 40-60 minutes away by car.
- The long-distance motorways A5, A7 and A45 are linked by the city highway (Gießener Ring).
- All the industrial and business areas are close to the motorway network.
- Giessen is connected to the fast track railway network.
- The airfield Giessen-Lützelinden can be used by small business planes.



Tried and tested industrial areas

- Technology area Europaviertel
This area encompasses an exemplary technology oriented infrastructure and is the location of about 100 companies specialising in biotechnology, medicine and environmental technology, pharmacy, information and communication technology. The Technology and Innovation Centre Giessen "TIG GmbH" provides excellently equipped laboratory, technology and office space for potential new businesses and also has the required infrastructure.
- Technology and Business Park Leihgesterner Weg
This area is on the doorstep of the Interdisciplinary Research Centre (IFZ) and the scientific faculties of the Justus-Liebig-University. It therefore has great potential for branches of industry that set great store by innovation, research and development. This prime location is well connected to the motorways and is not far from the town centre.



This brochure gives an outline of the activities offered in the field of life sciences but does not claim to be exhaustive.

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