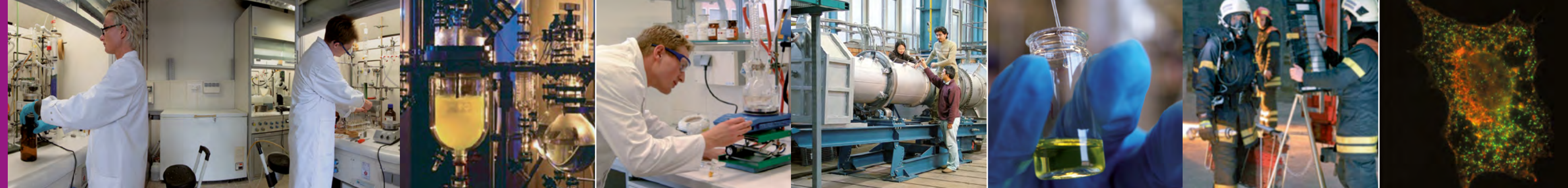




VST

FACULTY OF PROCESS AND SYSTEMS ENGINEERING



## → Otto von Guericke University Magdeburg

The Otto von Guericke University Magdeburg focuses on engineering and natural sciences, economics and management as well as medicine. The university, which was founded in 1993, has also found expansion to be essential in the areas of social sciences and humanities in order to meet the challenge of today's knowledge society. Over 14,000 students, including over 2,000 international students, are enrolled in over 80 programmes across the nine faculties. The dynamic, high-profile university offers state-of-the-art facilities, excellent student support and practical, hands-on education. The university's main areas of research and transfer are interdisciplinary in nature and strengthened on a lasting basis by the neighbouring non-university research institutes. Otto von Guericke University is characterised by openness and tolerance in its research and teaching.

### Research focuses

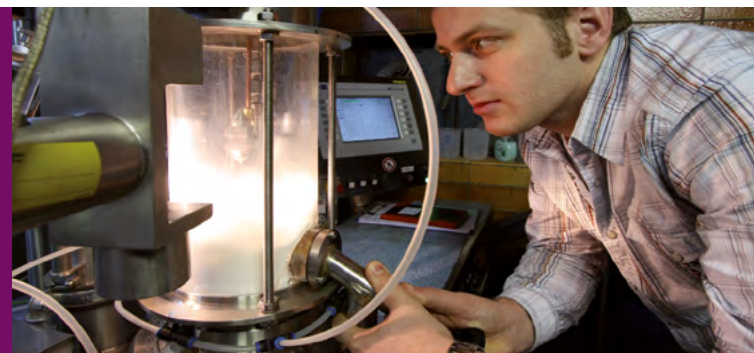
- Neuroscience
- Dynamic Systems

### Transfer focuses

- Automotive
- Digital Engineering
- Renewable Energies
- Medical Technology
- Fluidised Bed Technology

### Otto von Guericke (1602-1686)

The founder of experimental physics and famous son of the city of Magdeburg gives the university its name. The university aspires to teach and research in the tradition of this scientist, philosopher and engineer.



## A Faculty Overview

Process Engineering investigates, develops and puts into practice ecologically compatible material transformation processes which produce valuable products from raw materials using physical, biological or chemical influences. Fine chemical-based medicines, petroleum-based functional plastics, building materials and glass made from stone, ore-based metals, recycle and energy made from waste, silicon chips made from sand, and food made from agricultural raw materials to name just a few examples.

Process Engineering is everywhere, if not always recognisable at first glance, and is indispensable for the economy and society. It is even more essential when society expects prosperity, while at the same time demanding efficiency, sustainability and a good interaction with people and the environment.

### Degree Programmes offered by the Faculty of Process and Systems Engineering

- ⇒ Process Engineering
- ⇒ Chemical Engineering: Molecular and Structural Product Design
- ⇒ Environmental and Energy Process Engineering
- ⇒ Business Management and Process and Energy Engineering
- ⇒ Safety and Hazard Prevention
- ⇒ Systems Engineering and Technical Cybernetics
- ⇒ Biosystems Engineering
- ⇒ Chemical and Energy Engineering
- ⇒ Sustainable Energy Systems

### The Institutes in the Faculty of Process and Systems Engineering

- ⇒ Institute of Process Engineering (IVT)
- ⇒ Institute of Chemistry (ICH)
- ⇒ Institute of Fluid Dynamics and Thermodynamics (ISUT)
- ⇒ Institute of Apparatus and Environmental Engineering (IAUT)

## → Process Engineering

### Bachelor's/Master's Programme, 7+3 semesters in German

Process Engineering is an engineering science which deals with the investigation, development and technical implementation of processes which alters the properties and composition of materials. The task of the process engineer is to transfer results obtained during lab trials by chemists, physicists or material scientists to a production scale.

The programme is based on the fundamentals of chemistry, physics and mathematics and uses this in understanding and developing the different techniques of mechanical, thermal and chemical material transformation.

## → Chemical Engineering: Molecular and Structural Product Design

### Bachelor's/Master's Programme, 7+3 semesters in German

There have been rapid advancements in chemistry in the past few years. It is possible to develop new materials and synthesise nano-structures or new natural and active agents through the symbiosis of inorganic and organic chemistry and modern process engineering. The infrastructure of the Institute of Chemistry and the Otto von Guericke University makes fundamental research with a strong focus on application possible.

Connections to process engineering ensure that problems concerning process development or product designs can be easily dealt with.

## → Environmental and Energy Process Engineering

### Bachelor's/Master's Programme, 7+3 semesters in German

Today, the technical standards and the quality of life of an industrial and information society are defined considerably by environmental and energy process engineering. Future advancement in this area will be achieved through the application of physically substantiated models, process simulation and their verification for use in control and automation of material transformation and recycling processes. The "Magdeburg Teaching Profile" is characterised by the combination of modern methods of material and energy production and material recycling with engineering methods for characterising intricately distributed property functions of the target product both on a micro-scale and a technical macro-scale.

The tasks of the environmental and energy process engineer include water and soil treatment, air purification, recycling, use of waste materials, the development of renewable energy sources and the efficient use of energy.

## → Business Management and Process and Energy Engineering

### Bachelor's/Master's Programme, 7+3 semesters in German

The industrial engineer is a combination of engineer and business person. The need for such a combination is evident in the high demand for "generalists". Now and in the future the success of an economy depends on whether its products are economic. The economic viability of a process or product is just as important as its function and quality.

## → Safety and Hazard Prevention

### Bachelor's/Master's Programme, 7+3 semesters in German

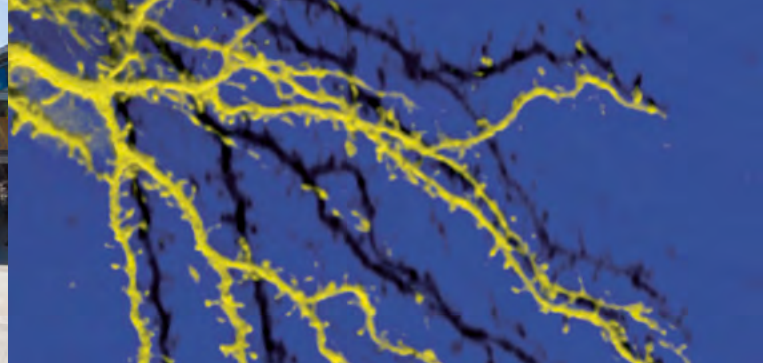
This programme is offered jointly with the UAS Magdeburg-Stendal. Large fires, floods or airplane crashes are rare events. Nevertheless society must be prepared for them. Scenarios are designed to develop management strategies which require the mastering and application of the fundamentals of natural science and technology. The programme is jointly offered by the Faculty of Process Engineering and Systems Technology and the UAS Magdeburg-Stendal, Department of Civil Engineering, in collaboration with the Fire Brigade and the School for Fire Control and Emergency Services in Heyrothsberge.

## → Systems Engineering and Technical Cybernetics

### Bachelor's/Master's Programme, 7+3 semesters in German

This interdisciplinary programme is offered by the Faculty for Electrical Engineering and Information Technology and the Faculty of Process Engineering and Systems Technology. At first glance, biological cells and factories have nothing in common. Cybernetics questions how a system works, for example, how it reacts to changes in its environment. How information is received, processed and transmitted. Which regulatory mechanisms are used. To answer such questions, the system being investigated is first translated into the "language of mathematics". Then the problems can be analysed using the same mathematical methods whether the subject matter in question is a cell or a factory.





## → Biosystems Engineering

**Bachelor's/Master's Programme, 7+3 semesters in German**  
This interdisciplinary programme is jointly offered by the Faculty for Electrical Engineering and Information Technology, the Faculty of Process Engineering and Systems Technology, the Faculty of Medicine and the Faculty of Natural Sciences.

Using modern methods in molecular biology, genetics and bioinformatics, not only increasingly detailed analysis of fundamental biological phenomena is possible today, but also the influencing of bacteria or mammalian cell genomes. The opportunities resulting from this include improvements in establishing the causes of disease to customised development and manufacturing of new drugs. In connection with these advances, requirements on the education of engineers, physicians and scientists also change. An interdisciplinary approach, combining life sciences, engineering and system sciences will be required more and more in the future.

## → Sustainable Energy Systems

**Master, 3 semesters**  
This master program is jointly offered by the Faculty for Electrical Engineering and Information Technology and the Faculty of Process and Systems Engineering. The subject of the program is to learn how safe, sustainable and resource conservative technology for the supply of energy can be developed, which is an essential requirement for the economic system as well as the public and everyday life. You will become an engineer with a fundamental knowledge of the whole area of renewable energies and the linking-up between the different technologies. During the program you will finally decide to focus on one of the following topics: wind and water power, solar energy, energy storage or bio fuels.

## → Chemical and Energy Engineering

**Master's Programme, 4 semesters, in English**  
Process engineers work in both traditional industries and, increasingly, in growth industries such as biotechnology, medical technology and microelectronics. They use physical, chemical and biological processes to change the composition of various materials. Young people from all cultures are enrolled in this English speaking course. They have state-of-the-art equipment including high-quality (laser) measuring instruments and high-powered computer technology at their disposal.

## Application and Admission Standards

The general qualification for university entrance is a prerequisite. An eight week internship before enrolment is recommended. There are no admission restrictions on the programmes. (For exceptions visit: [www.fvst.ovgu.de](http://www.fvst.ovgu.de)).

**Application deadline:**  
Application deadline for winter semester is the 15th of September, Application deadline for summer semester is the 15th of March. (For exceptions visit: [www.fvst.ovgu.de](http://www.fvst.ovgu.de)).

**Submit applications to:**  
**Campus Service Center**  
[www.servicecenter.ovgu.de](http://www.servicecenter.ovgu.de)  
E-Mail: [servicecenter@ovgu.de](mailto:servicecenter@ovgu.de)  
Tel.: +49 391 67 50000

**Contacts:**  
Faculty of Process and Systems Engineering  
of the Otto von Guericke University Magdeburg  
Exam and Internship Office  
Postfach 4120, 39106 Magdeburg  
Universitätsplatz 2, 39016 Magdeburg  
[www.fvst.ovgu.de](http://www.fvst.ovgu.de)



**Resident Housing Application:**  
Magdeburg Student Union  
Resident Housing Department  
PO Box 4053, 39015 Magdeburg  
[www.studentenwerk-magdeburg.de](http://www.studentenwerk-magdeburg.de)

### PROGRAM INFORMATION

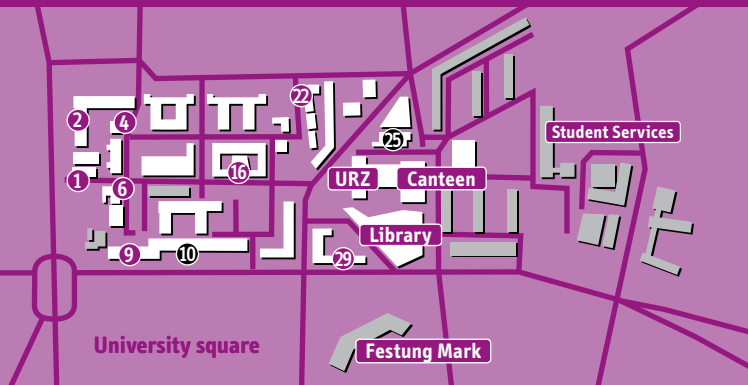
## Faculty of Process and Systems Engineering

**VST** FACULTY OF PROCESS AND SYSTEMS ENGINEERING



### THE UNIVERSITY CAMPUS

- |                                                                |                                                      |
|----------------------------------------------------------------|------------------------------------------------------|
| 1 Campus-Service-Center                                        | <b>10 Faculty of Process and Systems Engineering</b> |
| 2 Faculty of Mathematics                                       | 16 Faculty of Natural Sciences                       |
| 4 Principal's Office                                           | 22 Faculty of Economics and Management               |
| 6 Department of Academic Affairs                               | <b>25 Faculty of Process and Systems Engineering</b> |
| 9 Faculty of Electrical Engineering and Information Technology | 29 Faculty of Computer Science                       |
| 10 Faculty of Mechanical Engineering                           |                                                      |



The main building of the Faculty for the Humanities is located in Zschokkestrasse 32.