# DIGITAL TECHNOLOGIES
# STUDIES AND PRACTICAL TRAINING

Would you like to gain your first practical experience in a company during your studies and earn money at the same time? Then start your bachelor's degree in DIGITAL TECHNOLOGIES studies and practical training!

From the winter semester 2023/24, we will be offering our Bachelor's degree studies and practical training in cooperation with companies in the region for the first time.

The studies and practical program offers you optimal opportunities to get to know the company during the practical phases of your studies and to deepen your practical experience in a company.

In the bachelor's degree program DIGITAL TECHNOLOGIES studies and practical training you are enrolled as a student at Ostfalia University and TU Clausthal. In addition, you conclude an employment contract with the cooperating company. During your studies, you attend the modules of the regular Bachelor's program and supplement these with practical phases in the company.

The duration of the DIGITAL TECHNOLOGIES studies and practical training comprises six semesters plus a voluntary practical semester as a semester off. You complete your studies with a Bachelor of Science degree. We recommend completing the practical semester in the sixth semester.

## THE PRACTICAL PHASES

You will have a total of eight weeks during the lecture-free periods in February, July and August for the practical phases in the company. You complete your project and subsequent Bachelor's thesis in the last semester.

In addition, you have the option of a voluntary practical semester in a company, in which you can deepen your skills and abilities for professional practice. It is possible to apply for a semester off for this.

# STUDIES AND PRACTICAL TRAINING

**1st semester**
Orientation and Fundamentals

**2nd to 5th semester**
Professional and specialized studies

**6th semester**
Practicum phase and Bachelor thesis

**Studies and practical training**
Practical phases in the company are possible during the lecture-free period, during a voluntary semester off and for working on the Bachelor project and the Bachelor thesis.

**Admission Requirements**
- free admission
- University Entrance Qualifications

**Our practice partners and vacancies**
An overview of all practice partners and vacancies can be found on our website www.digitecstudieren.de.

**Application period**
The program can only be commenced in winter term.

The application for a position with one of our practice partners takes place directly at the company. In addition, the application for a place on the study program is made via the application portal of the Ostfalia University of Applied Sciences from 15 May, as with the regular Bachelor's degree course.

**Opportunities for further qualification**
Master DIGITAL TECHNOLOGIES (M.Sc.)

**Internationalization**
The courses are mainly offered in German. Some modules can be taken in English.

You have technical questions or need more detailed information on the structure and contents of the program? Please do not hesitate to contact our study program coordination and program advisory services.

## PROGRAM COORDINATION
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## PROGRAM ADVISORS
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Do you have further questions or need assistance applying for this study program? Please contact the central student advisory services.

**TU Clausthal Student Advisory Service**
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**Ostfalia Student Advisory Service**
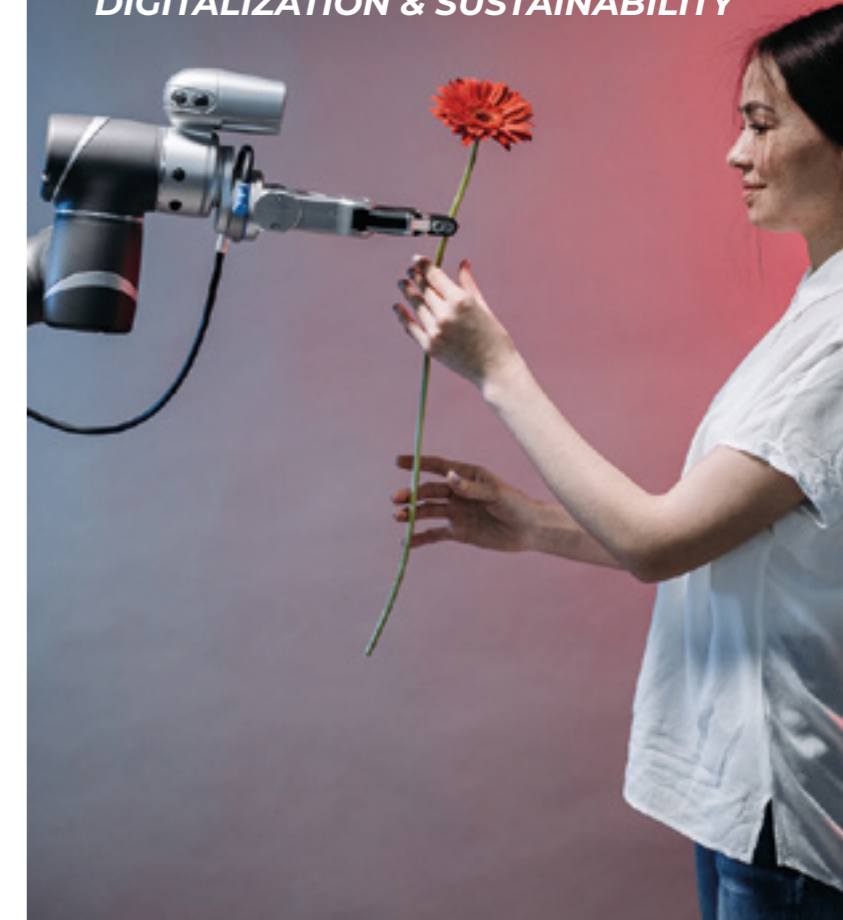Phone: +49 (0) 5331 939 15200
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# DIGITAL TECHNOLOGIES

*YOUR STUDY PROGRAM FOR DIGITALIZATION & SUSTAINABILITY*

## BACHELOR OF SCIENCE

A collaborative study program of

Ostfalia University of Applied Sciences

TU Clausthal

## DIGITAL TECHNOLOGIES - Your study program for digitalization and sustainability!

DIGITAL TECHNOLOGIES is a joint study program of the Ostfalia University of Applied Sciences and the Clausthal University of Technology. Both universities teach in their innovative computer science program, which digital techno-logies and innovations can be used to sustainably shape the world of tomorrow. To this end, they combine their power from regional roots, close links between the natural sciences, engineering and economics and good contacts with compa-nies and external institutions.

### The bachelor's program

In the bachelor's program, we teach competencies for success-ful digitization in industry, research and administration, which often takes place at the transition from computer science to the fields of applications.

The foundation of the study program is formed by the subjects of **COMPUTER SCIENCE**. In addition, you choose your individual **FIELD OF APPLICATION** in the second semester and deter-mine your specialist focus. The knowledge from both areas is combined in the **DIGITIZATION PROJECTS.**

### One study program, three locations

You will spend the first year of your bachelor's degree mainly at the Energy-Campus in Goslar. Here we offer our students at GoTEC modern equipped workstations and lecture rooms - the best learning environments for learning together and working in a team!

After the first year of study, the courses take place at the univer-sity locations Clausthal-Zellerfeld, Wolfenbüttel and Salzgitter (when choosing mobility as the field of application). A mobility package supports you to reach the locations!

## ■ Your practical-oriented computer science study

No other discipline is developing so rapidly and is bringing so many innovations in relation to everyday life as computer science. Computer scientists are all-rounders and shape the future.

**Computer science topics:**
- Programming techni-ques with Python and JAVA
- Internet of Things (IoT), Cyber-Physical- Systems (CPS)
- Robotic and machine learning
- Mathematical foundations of computer science
- Model-based system development
- Databases and Security & Privacy

## ■ Exciting digitalization project, fewer exams

The heart of our study program are the interdisciplinary digitiza-tion projects, in which you will gain a lot of practical experience. Working in small teams with fellow students, you develop digital, sustainable solutions and prototypes for tasks or practice-relevant questions from the thematic areas of the fields of application and computer science disciplines. The solution ideas are always deve-loped with the help of digitalization technologies.

Through project work with Scrum you learn agile working. In addition to the theoretical basics, you will also acquire a broad application competence and are thus optimally prepared for your future professional life.

**You will acquire skills in the following area:**
- Project management and creativity techniques
- Development of hard- and software
- Communication, conflict and teamwork skills

INNOVATION

DIGITALIZATION-PROJECTS

COMPUTER SCIENCE

FIELDS OF APPLICATION

SUSTAINABILITY
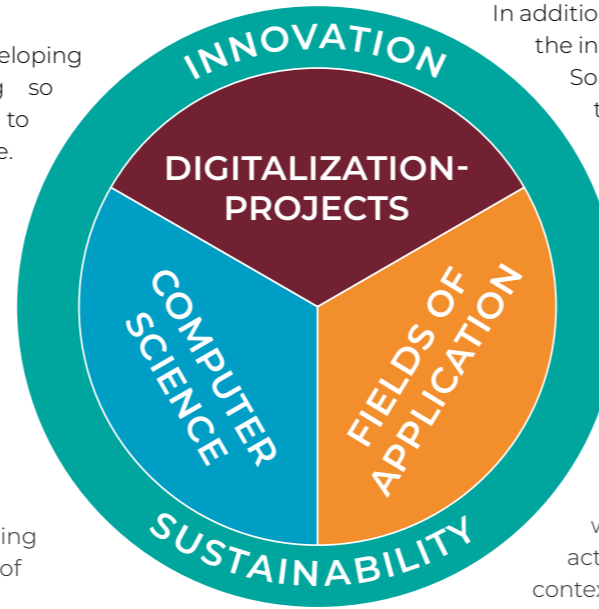
## ■ Choose your professional focus

In addition to studying computer science, you will specialize in the industry of you choice in one of six fields of application! So choose the field of application which interests you the most and set your professional focus.

**#1: AUTONOMOUS SYSTEMS** will take on a variety of tasks and functions in the future with artificial intelligence. You will learn the basics and in-depth know-ledge of robotics and learn about the correlations between the prognosis and the behavior of autonomous systems. #2: What are the causes, dimensions and manifestations between climate change and pollution? In **CIRCULAR ECONOMY & ENVIRONMENTAL ENGINEERING**, you will gain the ability to evaluate decisions and actions in social, economic, and political contexts in a general and transdisciplinary way. **#3:** Digitalization is producing new, successful, digital business models and processes. Innovations are created at the interface with computer science, which are These innovations are considered in the fiel of application **DIGITAL TRANSFORMA-TION**. **#4:** In addition to the basics of electrical engineering and thermodynamics, **ENERGY** deals with the essential aspects of technical building equipment such as air conditioning and ventilation technology. **#5:** In the field of application **INDUSTRY 4.0**, learn about the diverse aspects of digital production pro-cesses and structures, from measurement technology to auto-mation technology, as well as computer-integrated and additive manufacturing processes. **#6:** In the **MOBILITY** fields of applica-tion, you will learn the fundamentals of traffic and logistics, traffic control and traffic management and automated traffic systems.

## ■ Develop innovations for a sustainable future

We not only attach importance to sustainability in every respect, but also promote innovative ideas that contribute to sustainable development - far beyond the start-up! The perfect environment as an incubator for your career: Whether industry, science or your own start-up!