

# Green Technologies: Energy, Water, Climate

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## WHAT WILL OUR WORLD LOOK LIKE IN THE FUTURE?

Climate change, high consumption of energy and resources, disruption of ecosystems and constantly growing global population are the challenges that humankind faces today. What tomorrow's world looks like will therefore depend to a decisive degree on which solutions we find to deal with these developments.

## WHAT IS TO BE DONE AND HOW ARE WE TO SUCCEED?

The Green Technologies: Energy, Water, Climate study program deals with precisely these issues. By connecting specialized knowledge, technical and communicative skills we train engineers who think in interdisciplinary and solution-oriented ways. The focus is on "green" technologies to ensure sustainable, climate- and resource-friendly supplies of energy and water. Scarce resources are used to generate energy, causing serious problems for nature and the environment and accelerating climate change, for example. That necessitates close collaboration in energy technology, water and resources and climate protection. Green Technologies is an engineering discipline that deals with processes to protect the environment and even to restore damaged nature.

## WHERE DO I ENCOUNTER GREEN TECHNOLOGIES IN EVERYDAY LIFE?

In your daily life you must surely see wind turbines from time to time. They are a brilliant example of energy technology and renewables. You also come into contact with Green Technologies whenever you use a technical device or plug a cable into the power socket. The electricity first had to be generated and then to reach you. When you throw something in the trash, for instance, or use the bathroom or drink water from the faucet you come into contact with green technology. But not always and not everywhere and not to the extent that is needed. That's why we need you! You know where improvements and ideas are needed, and by studying Green Technologies you are helping to make the transition to greener and more sustainable technology. It also of course involves recycling, waste disposal and wastewater treatment.

## ON WHICH ASPECTS OF GREEN TECHNOLOGY DOES THE TU CONDUCT RESEARCH?

The TUHH has three areas of expertise in which it conducts research. One of them is Green Technologies, just like your study program. Its focus is on sustainable, environment-friendly "green" research topics. We work across disciplines on the exciting challenges of the energy turnaround (the transition to a sustainable energy supply from renewables) and increasingly scarce resources. We

work on renewable energy on and from the sea, such as offshore wind farms or harnessing the power of ocean waves. We look into alternative and renewable fuels such as hydrogen. In other areas, for example, we investigate how renewable energies can be stored and how they can reach you and other consumers. Further research areas are safe water supplies, protecting water resources and soil and recovering resources from garbage.

## WHAT WILL I LEARN IN MY STUDY PROGRAM?

This study program at the TU Hamburg is the only one of its kind in Germany, teaching engineering in interaction with energy, water and the climate. It combines the competences of energy technology,

Links: → [Study program Green Technologies: Energy, Water, Climate](#)

process engineering and sustainable utility and waste disposal engineering with scientific disciplines. In the first three semesters the focus is on learning the fundamentals of math, mechanics, chemistry, computer science and thermodynamics. The program then progresses to fundamental engineering disciplines and renewables, water supply and treatment. From the fourth semester onward you can choose in keeping with your personal interests one of the four specializations energy systems, water, bioresource technology and energy technology.

#### WHAT SKILLS ARE REQUIRED OF ME?

You will need to know the fundamentals of physics and chemistry and a lot of mathematics as the basis for further study. So you should be interested in science and technology. Studying often requires self-motivation to learn something. There is little or no compulsory classroom teaching and the exam is not until the end of the semester. So you will need to work hard and show staying power. Learning with others in small groups is a very good way to cope with a lot of material and (re)motivate yourself. Campus life at the TUHH and the numerous activity groups provide great further opportunities for learning, experiencing and doing things together.

#### WHAT ARE THE FOLLOW-ON OPTIONS AFTER MY BACHELOR'S DEGREE?

The specializations in the bachelor's study program are composed and coordinated so as to prepare you optimally for a further (master's) degree course and enable you to make a seamless transition to consecutive master's programs at the TU Hamburg.

#### FURTHER STUDIES

With a B.Sc. in Green Technologies: Energy, Water, Climate you can go on to study, subject to your specialization, for a master's at the TUHH in one of the following subjects:

- [Renewable Energy \(M.Sc.\)](#)
- [Water and Environmental Engineering \(M.Sc.\)](#)
- [Bioprocess Engineering \(M.Sc.\)](#)
- [Energy Systems \(M.Sc.\)](#)
  
- [Environmental Engineering \(M.Sc.\)](#)
- [Chemical and Bioprocess Engineering \(M.Sc.\)](#)

(Internationally oriented study programs taught mainly in English)

(4 semesters each for a Master of Science)

#### IN WHICH AREAS CAN I LATER PURSUE A CAREER?

The Green Technologies: Energy, Water, Climate study program trains engineers for which there will be a high demand now and in the future. The range of potential employers includes engineering and planning offices, power utilities and water supply and disposal utilities, industrial enterprises and authorities.

#### IMPORTANT CONTACTS

##### Information about Studying

At the Infothek you will find detailed information about studying in general and a wide range of course and other information material. Register here for meetings for prospective students or arrange for counseling in the subject area of your choice.

##### Your Contacts

Ms Köther and Ms zur Borg, phone or mail: Tel. 040 428 78-2232, studienberatung@tuhh.de, study@tuhh.de

##### Contact with Students

In addition to the AStA or students' union, the Fachschaftratsrat or student body of the Process Engineering department offers advice from a student viewpoint: [www.tuhh.de/fsrv/aktuell.html](http://www.tuhh.de/fsrv/aktuell.html)

##### International Students – Studying Abroad

The International Office advises and looks after international students. Its website also provides information about studying abroad for TUHH students. Hamburg University of Technology welcomes and promotes student exchange.