

Technomathematics

Apply now

WHAT IS TECHNOMATHEMATICS?

Technomathematics is the part of math that is specialized in working on technical problems. While math grows increasingly important, what is required of mathematicians has changed. Today's challenging technical problems require both extensive mathematical knowledge and the ability to collaborate with engineers and technicians. At the same time mathematicians must be able to implement their ideas on a computer with the methods of computer science. Technomathematics takes up this challenge, combines math, engineering and computer science and is therefore "math for makers."

WHERE DO I COME ACROSS TECHNOMATHEMATICS IN EVERYDAY LIFE?

When I drive a car, move my virtual character around the landscape of a computer game or use a filter in Snapchat, I am unusually unaware of how much math that involves. Math really is the basis of all scientific progress. That is why no new car, no aircraft, no train, no bridge, no building, no wind turbine, no artificial hip, no cardiac pacemaker, no smartphone, no refrigerator, no computer, no washing machine, no artificial artery, nearly no new product takes shape without a whole lot of math. So technomathematicians find work wherever engineers work on complex tasks.

IN WHICH AREAS OF TECHNOMATHEMATICS DOES THE TU HAMBURG DO RESEARCH?

The Institute of Mathematics at the Hamburg University of Technology

consists of chairs of applied mathematics, discrete mathematics and numerical mathematics. Math is also used in all the other exciting research at the TUHH.

WHAT WILL I LEARN IN MY STUDIES?

At the TU Hamburg the technomathematics study program is offered in cooperation with the University of Hamburg. Classes are around 60% math, 20% engineering and 20% computer science. In the first three semesters the program starts like a normal math degree course with the math basics linear algebra and analysis. In addition you learn basic programming techniques and attend the engineering foundation lectures on mechanics and electrical engineering. From the fourth semester, students can arrange their own schedule within the three areas of study and thereby specialize in line with their own interests.

WHAT IS REQUIRED OF ME?

To study technomathematics you should be able to think well logically and abstractly. You should also have a strong interest in science and technology. As a student you will often need to motivate yourself to learn something. There is very little obligation to attend and the exam is not until the very end of the semester, so you will need to have a great deal of self-discipline and staying power and to be prepared to invest time. The TU Hamburg has, however, many AGs, or working groups, in which you can, for example, test or extend your programming skills. So you can collaborate in large-scale projects

>



Katharina Klioba
TECHNOMATHEMATICS

I have always been curious and find solving problems and discovering new things exciting. At the same time math cast its spell over me at an early stage. That's why I am studying technomathematics. It combines a fully-fledged math study program with engineering and computer science. My research internship in Italy showed me that this interdisciplinarity is very helpful and exciting in practice. That is why I am now studying for an M.Sc. in technomathematics and would then like to work in research and development.

Technomathematics

Apply now

such as an autonomous vehicle or football-playing robots. You will there soon find learning groups and get to know students in higher semesters.

FURTHER STUDIES?

With a B.Sc. in Technomathematics you can go on to study for the following master's degrees:

- [Technomathematics \(Uni HH and TUHH\)](#)
- [Mathematics \(Uni HH\)](#)

In addition, the B.Sc. program's interdisciplinarity makes a master's in computer science and engineering possible.