

Mechatronics

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WHAT DO MECHATRONICS ENGINEERS DO?

You will work with a focus on the future at the interface of four disciplines: mechanical engineering, electrical engineering, computer science, and control systems. So you will learn with an interdisciplinary approach and be in a position to take a holistic view of tomorrow's technical systems. At the TU Hamburg you can work with intelligent robots or directly on interaction between man and machine. This interface is still frequently underestimated as a haptic problem between man and machine or sometimes as a communication or sensory barrier, as demonstrated by the football-playing HULKS: <https://hulks.de/> <https://www.tuhh.de/imek/forschung/haptische-geraete.html>

HOW CAN I SHAPE THE FUTURE WITH MECHATRONICS?

As a mechatronics engineer you will convert your ideas into technology. If you would like to develop mobile robots or vehicles, the TU Hamburg is the place to be. During your studies you will get to know different research projects such as robot-controlled 3D printing at the Institute of Aircraft Production Technology, where research is undertaken on the especially lightweight but at the same time rigid components required in aviation or automobile manufacturing. Using this process, individual parts can be made without any other tools. Here you can see how a 3D Christmas tree takes shape with the assistance of a robot: [Video Link](#) Another example of new technologies is the model of an autonomous underwater vehicle at the Institute

of Mechanics and Ocean Engineering at the TU Hamburg or the e-gnition-AG's self-built racing cars: [Link e-gnition Hamburg](#)

The overriding objective is to develop thinking machines that can control, maintain and develop themselves with the simplest of interfaces to those who design them.

WHAT DO I LEARN ON THE COURSE AND WHERE DO I LATER FIND A JOB?

After studying mechatronics at the TU Hamburg you will be able to design intelligent systems and products and understand their complex technical relationships. Typical mechatronic products are electric drives, environmental sensors and their respective data processing. They are used in, say, classical industrial robots or small humanoid robots that will in future serve as domestic robots. They are also a part of everyday items such as an electric window regulator or an automatic coffeemaker. Due to their interdisciplinary training TU Hamburg mechatronics graduates have excellent job prospects in the automotive and aviation industries, in vehicle and automation technology, robotics, microsystems and precision engineering, and medical technology.

HOW IS THE PROGRAM STRUCTURED?

In the first four semesters math, mechanics and electrical engineering account for around half of the study program. Computer science and the basics of engineering methods complement them. In semesters 5 and 6 the focus is mainly on interdi

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Mechatronics at a Glance

DURATION OF STUDY:
6 SEMESTERS, FULL-TIME
DEGREE: BACHELOR OF SCIENCE (B.SC.)

Mechatronics is the right study program for you if your thirst for research covers different areas, if you would like to understand how systems as a whole function, if you are interested in mechanics and electrical engineering and programming too. Study mechatronics at the Hamburg University of Technology and you can look forward to any amount of practical work, testing and construction. But first there is a whole lot of calculation to do. Math is always a part of the study program.

→ [Internship regulations](#)

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disciplinary content and you will gain practical experience in construction projects, the measurement, control and regulation technology labs, and in designing mechatronic systems.

FURTHER STUDIES?

With a B.Sc. in mechatronics you could go on to study for an international master's degree:

→ [International Master Mechatronics \(M.Sc.\)](#)

→ [International industrial engineering](#)

