

OVERVIEW

Degree

- Master of Engineering (M.Eng.)

Duration

- 3 semesters, third semester online

Start

- Annually in March (summer semester)
- Annually in October (winter semester)

Admission requirements

- Successful completion of a bachelor's degree in Mechatronics or a closely related field
- A2 language level must be completed by the end of the studies, either by passing the German course A2/ part 3+4 at DIT or proven by a certificate.
- Aptitude assessment is required

Language of instruction

- English

Fees

- No tuition fees
- €62 student services fee per semester

APPLICATION

Application period

- 15 April - 15 July for entry in October
- 15 November - 15 January for entry in March

Online application

- In the Primuss Portal at www.th-deg.de/en/apply

Deadline for submission of required documents

- Summer semester: 15 January
- Winter semester: 15 July

Notice of acceptance or denial

- In the Primuss-Portal at the beginning of February

Enrolment

- Information available in letter of admission

Semester start

- Summer Semester Start: 15 March
- Winter Semester Start: 1 October
- Deferred admission will not be granted

STUDY LOCATION

Campus Cham
Badstraße 21
93413 Cham
Germany

www.th-deg.de/en/campus-cham



CONTACT

Are you interested in studying for this Master in Artificial Intelligence for Smart Sensors and Actuators and would like to find out more?

Course enquiries

✉ studium-cham@th-deg.de

🌐 www.th-deg.de/en/campus-cham

☎ +49 9971 99673 29 or 20

General enquiries about studying at DIT

✉ welcome@th-deg.de

🌐 www.th-deg.de/en/advice



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PIONEERING & VIBRANT



MASTER
ARTIFICIAL INTELLIGENCE
FOR SMART SENSORS
AND ACTUATORS



COURSE DESCRIPTION

Artificial Intelligence for Smart Sensors and Actuators postgraduate course is suitable for you if you are either a bachelor graduate or a professional engineer aiming to specialize in this innovative field.

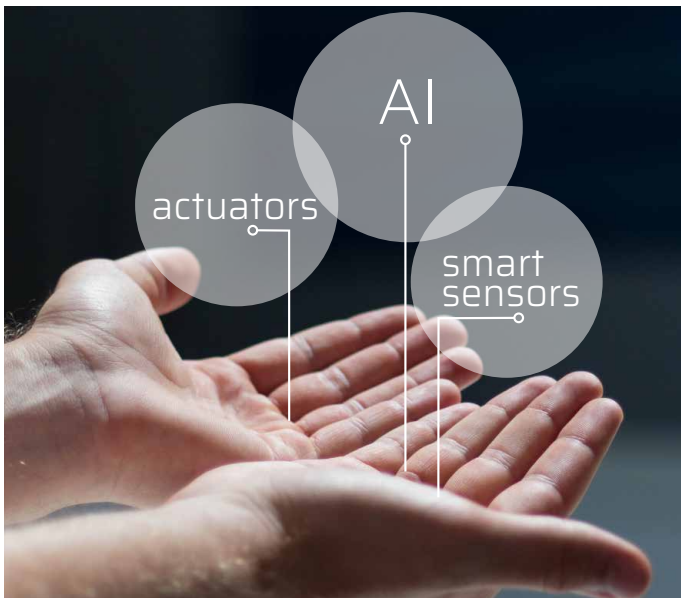
The course covers a wide range of specialist subjects that tackle current global topics. These are:

- Process of machine learning (neuronal networks)
- Embedded control for smart sensors and actuators
- Sensor technology (e.g. MEMS)
- Methods of system networking (wired and wireless communication)
- Methods of data processing (e.g. Cloud Computing, Big Data)
- System design

Our dedicated professors and support staff as well as state-of-the-art workshops and labs provide you with an excellent infrastructure to study high-tech areas of AI, intelligent sensors and actuators.

You will tackle practical challenges by working on four case studies that will additionally strengthen your personal, social and professional skills.

After successfully completing the course you will be awarded with the academic degree Master of Engineering, abbreviated to M.Eng. This qualifies you to expertly carry out creative R&D work in this exciting professional world. Top graduates can potentially study for a doctoral degree.



COURSE CONTENT

This course is located in the Cham campus of the Deggendorf Institute of Technology, where it is embedded in a state-of-the-art research and development centre focusing in areas of mechatronic systems and production technology, sensors and actuators, robotics and control technology.

The course consists of three theoretical semesters and concludes with the master's thesis.

Semester 1	Introduction to Artificial Intelligence, Machine Learning and Deep Learning, Microsystems and Physical Crosscoupling, Data Acquisition and Control, Case Study Sensors and Actuators, Microcontroller Architectures, Modell-Based Function Engineering, Case Study Embedded Control Solutions
Semester 2	Big Data, Computer Vision, Case Study Intelligent Systems, Algorithms of Autonomous Systems, Autonomous Robotics, Case Study Autonomous Systems, FWP-module (course-related elective subject)
Semester 3 (online)	Systems Design, Systems Intercommunication, Master Thesis, Master Seminar

All lectures and exams are conducted in English, therefore fluent English skills are crucial for all students.

Compulsory language courses are provided, if your native language is not German.

THE FUTURE OF AI

Artificial intelligence (AI) describes a sub-discipline of computer science that deals with the research of "intelligent" problem-solving behaviour and the creation of "intelligent" computer systems.

In a multitude of fields, AI-based systems are fed by sensor data to be processed before being returned to an actuator device that performs the operation or task involved.

The interaction between information processing and the process, as data source and data sink as well as the influences of the quality of the sensor data and actuator interventions, influence overall system efficiency. Smart sensors also feature signal pre-processing, monitoring algorithms for safeguarding the sensor function, connectivity (e.g. Bluetooth, WIFI, 5G) and power supply functions, where applicable.

Smart actuators also supplement control intervention in the technical process with signal processing, monitoring mechanisms and various methods of communication. The resulting signal-processing system features additional "intelligent" properties that further enhance its performance.

