

Fields of Activity

The MSc MNT qualifies for career opportunities in national and international companies as well as for an academic career (e.g. PhD studies).

Typical work profiles are:

- Research and development or
- Project or production management or
- Project consulting

in the areas of:

- Sensor Technology
- Microsystems Technology
- Microelectronics
- Measurement Technology

for the branches:

- Medical Technology
- Power Engineering
- Industrial Electronics
- Information Electronics

Key data of the study program

Degree:	Master of Science
Length of study:	4 semesters
Start:	Winter semester (October)
Program language:	English
Prerequisite:	Please refer to our website at www.tu-ilmenau.de/en/international

Admission Requirements

For admission to the Master of Science in Micro- and Nanotechnologies (MSc MNT) the successful completion of a Bachelor or comparable course of at least 6 semesters or 180 credit points is required. The MSc MNT builds upon Bachelor degrees in fields of:

- Electrical and Communications Engineering
- Mechanical Engineering
- Mechatronics
- Technical Physics
- Material Science

In addition, the applicants need a good background in the following subjects:

- Fundamentals of electrical engineering
- Electronics
- Fundamentals of mechanical engineering
- Material science
- Physics, chemistry and higher mathematics

Contact

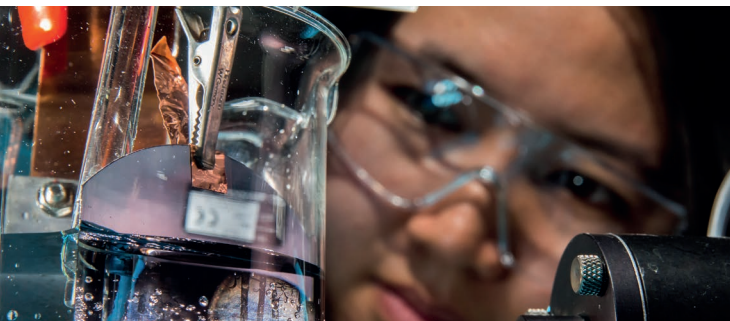
Academic advisor:
Prof. Dr. Jens Müller
jens.mueller@tu-ilmenau.de
Phone: +49 3677 69-2606

Examination office:
Ms. Cornelia Scheibe
referat-ei@tu-ilmenau.de
Phone: +49 3677 69-2610

We look forward to your application at www.tu-ilmenau.de/apply

MICRO- AND NANOTECHNOLOGIES

MASTER OF SCIENCE



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TECHNISCHE UNIVERSITÄT
ILMENAU

Qualification profile

Studying Micro- and Nanotechnologies at the TU Ilmenau offers a combination of classical micro-technologies and modern nanotechnologies. It covers methods, tools and theoretical considerations for research and development in the world of micro- and nanoscale structures.

The aim of this engineering sciences-oriented master program is to teach the scientific fundamentals and basic technical knowledge about micro- and nanostructure generation, as well as their systemic integration in systems. Students acquire skills to contribute and drive future developments in micro- and nanotechnologies and nano-technical applications.

Particular attention is devoted to teaching the relevant methodological variety of lithographic nanostructuring techniques (top-down strategy), the molecular structuring through self-assembly (bottom-up approach), the opportunity of combining both concepts, and the required characterization techniques.

Under the principles of unity of research and teaching this interdisciplinary program is supported by the Institute of Micro- and Nanotechnologies MacroNano® and its technological Center for Micro- and Nanotechnologies. Students will be involved in an early stage in research projects and are given the possibility to get hands-on experience in the clean rooms.

Content of the master program

The program is based on courses both in fundamental and engineering sciences and aims to deepens skills and competencies acquired from undergraduate studies or practical work experience in the field of micro- and nanotechnologies.

During the first two semesters the required theoretical background is taught and the students already have the opportunity to select certain specialization courses in combination with elective soft skill courses. Students without German language knowledge are requested to take at least one German course. The third semester consists of a further specialization subject and an advanced research project. Within the fourth semester all students work on the master project and thesis which is defended in a colloquium.

Semester 1	Semester 2	Semester 3	Semester 4
Electronics Technology 1	Micro Technologies 2	Project with seminar	Master thesis with colloquium
Semiconductor Devices 1	Lab Materials & Micro-/Nanofabrication		
Materials of Micro- and Nanotechnologies	Advanced studies (choice of subjects)	Advanced studies (choice of subjects)	
Nanodiagnostics		Technical subject (choice from the master curricula)	
Nanotechnology			
Introduction to project work Soft skills			

- Compulsory modules
- Elective modules
- Specialization

