Deutscher Akademischer Austauschdienst
German Academic Exchange Service

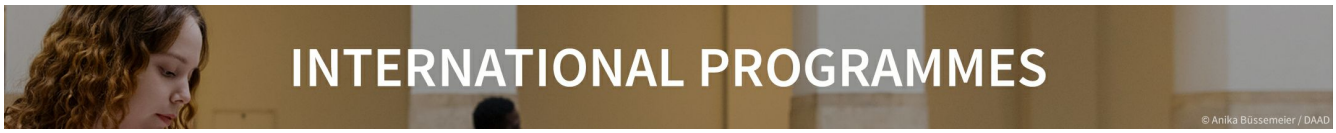
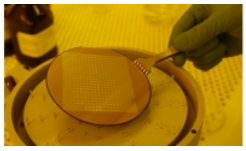


Table of Contents

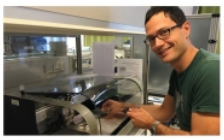
Master's degree

Master's in Micro- and Nanotechnology

Hochschule München University of Applied Sciences • München







Overview

Degree	Master of Science
Teaching language	• English
Languages	Enough courses are offered in English to complete the programme only in English, but in this case, the course catalogue is more or less fixed. Participants can choose to write their Master's theses in either language. German language courses are offered by the Department for General Studies. German language skills are required, because project study and Master's thesis are typically done in German companies.
Full-time / part-time	• full-time • part-time (study alongside work)
Mode of study	Less than 50% online
Programme duration	3 semesters, 6 semesters
Beginning	Winter and summer semester
Additional information on beginning, duration and mode of study	https://hm.edu/micro-nanotechnology
Application deadline	2 May–15 June for the following winter semester 15 November–15 January for the following summer semester https://www.hm.edu/en/index.en.html
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No

Joint degree / double degree programme	Yes

Description/content

In addition to the instruction of basics in quantum physics, the interdisciplinary orientation of this Master's course of study requires a broad spectrum of knowledge and abilities. These are gathered in a wide offer of courses.

The course of study is based on both required and elective modules. The elective modules, which make up the majority of the academic course of study, are split into the following three sections:

1. Those courses specifically related to the course of study discuss selected aspects of the discipline of microtechnology and nanotechnology. These courses explore in detail such topics as microanalytics and nanoanalytics, materials used in microtechnologies and nanotechnologies, biomicrotechnology, and bionanotechnology as well as electrochemical storage systems.
2. The general studies courses teach professional competence in areas such as knowledge management, start-up business techniques, and management skills.
3. Courses with specific applications of microtechnologies and nanotechnologies deal with industrially relevant branches such as optic/photonics, chemistry, biotechnology, electronics, and modelling and simulation. Further applications such as automotive applications, aerospace, and space flight as well as mechatronics are given special attention.

The application of theory to practice is emphasised in lab classes, the project study, and the Master's thesis. Our graduates are ready to apply their knowledge directly to their professions or to continue their studies towards a doctoral degree or postgraduate work. A prerequisite for the lab class in nanotechnology is the completion of the lab class in microtechnology.

Great importance is attached to internationalisation. A large number of courses is offered in English, and students hold at least one presentation in English in the colloquium "Micro- and Nanotechnology". Additionally, a strong network exists with foreign universities and research institutions, which also offer lectures and projects in the field of microtechnology and nanotechnology.

The programme can be studied and completed in English, but German language skills (level A2) are required for a broader choice of electives and for finding appropriate projects and Master's theses within the university or in research institutions or industry. An equivalent to 10 ECTS in physics must have been covered during the Bachelor's degree.

It is recommended to enrol as a part-time student to have the freedom to complete the course in six semesters instead of three. Even if enrolled as a part-time student, studying the programme in three semesters is possible.

Course Details

Course organisation

Examples for educational organisation:

Full-Time Study (three semesters):
First semester: lectures (quantum physics, colloquium, one elective course, one multidisciplinary course, one course from sector-specific applications), lab class microtechnology
Second semester: lectures (micro- and nanotechnological devices, colloquium, one elective course, one course from sector-specific applications), lab class nanotechnology, project study
Third semester: Master's thesis, colloquium

Part-Time Study (six semesters):
First semester: lecture (quantum physics), lab class microtechnology
Second semester: lecture (micro- and nanotechnological devices, colloquium, one elective course)
Third semester: lecture (colloquium, one elective course), lab class nanotechnology
Fourth semester: lecture (colloquium, one course from sector-specific applications, one multidisciplinary course)
Fifth semester: lecture (one course from sector-specific applications), project study

	Sixth semester: Master's thesis, colloquium
A Diploma supplement will be issued	Yes
Certificates for specific modules are awarded	Yes
International elements	• International guest lecturers • Specialist literature in other languages • Projects with partners in Germany and abroad
Integrated internships	The Master's programme in Micro- and Nanotechnology includes a project study and a Master's thesis. Many students do their research work for three to six months in local companies. Programme advisers will assist students with finding an appropriate position. German language skills are beneficial for finding a position either in academia or industry.
Course-specific, integrated German language courses	No
Course-specific, integrated English language courses	Yes

Costs / Funding

Tuition fees per semester in EUR	None
Semester contribution	Approx. 85 EUR
Funding opportunities within the university	No

Requirements / Registration

Academic admission requirements	In order to enrol in the programme, you must meet the following qualifications as well as other requirements which may apply. You have received a Bachelor's degree or similar diploma in one of the fields of the natural or engineering sciences, respectively a similar field with a final grade better than the equivalent German grade "good". Your degree work was attained either at a German university or at a foreign school that is properly accredited. The Bachelor's degree must cover at least 180 ECTS credit points and at least six theoretical semesters. The completion of a practical semester or an industrial internship of at least 18 weeks during the Bachelor's studies is required. An equivalent to 10 ECTS in physics must have been covered during the Bachelor degree. Applicants who do not meet the requirements have to prove their technical qualification in an oral

	entrance examination. This examination is offered after the correct application in due time and lasts 20 to 30 minutes. The entrance examination serves as proof for sufficient background skills in mathematics, fundamentals in physics, basics in semiconductor technology, and industrial experience. The examination is held by two full professors.
Language requirements	English language skills at level B2 need to be proven. We ask for a German language certificate at level A2 at the time of application. We expect you to improve your German language competencies during your studies. Level A2 is not sufficient for working in German companies or following lectures in German. Please see: https://hm.edu/micro-nanotechnology
Application deadline	2 May–15 June for the following winter semester 15 November–15 January for the following summer semester https://www.hm.edu/en/index.en.html
Submit application to	https://www.hm.edu/en/your_stay_at_hm/students/fulltime/application_master.en.html

Services

Possibility of finding part-time employment	Finding a job in Munich is comparatively easy, as it is one of the strongest employment regions in Germany. German language skills are beneficial.
Accommodation	http://www.studentenwerk-muenchen.de/en/student-accommodation/ The department cannot assist with finding accommodation in Munich.
Career advisory service	Link to the Career Centre: https://www.hm.edu/studium_1/career_alumni/career_center/startseite/index.de.html
Support for international students and doctoral candidates	• Buddy programme • Specialist counselling

Master's in Micro- and Nanotechnology

Introduction to the Master's in Micro- and Nanotechnology (in German)

» more:
https://youtu.be/axWVJuNgh0c

Hochschule München University of Applied Sciences

Entrance to HM Hochschule München University of Applied Sciences, Lothstrasse 64

© Nicolai Schneider

HM Hochschule München University of Applied Sciences is the second largest university of applied sciences in Germany. Our 18,000 students and our location in a leading European business centre afford fantastic opportunities. This also means that we have a responsibility in industrial, economic, and social contexts.

We offer degree courses and active academic collaboration in the STEM subjects (sciences, technology, engineering, mathematics), business administration, the social sciences, and public health as well as in architecture and design. Our Department of General and Interdisciplinary Studies is unique in providing every student with a cross-disciplinary education and in developing their personal skills.

It is especially important for us to nurture our graduates' characters. Besides their well-founded professional skills, our students should stand out by thinking and acting in a sustainable, entrepreneurial, and intercultural way. With these additional qualifications, which reach beyond the students' specialist fields, we prepare them to contribute to society and to approach their careers with foresight, creativity, and a sense of responsibility.

We offer and develop individualised study approaches and options for applicants with varied educational backgrounds, thus opening our university and offering a range of paths for lifelong learning and studying. HM Hochschule München University of Applied Sciences ensures excellent applied and research-based teaching in the following four areas: Bachelor's degrees for students who have finished their secondary schooling and for the professionally qualified, Master's degrees and doctoral qualifications, continuing education and life-long learning in all fields, and applied research.

HM Hochschule München University of Applied Sciences actively engages with its educational mandate and aims to secure an outstanding position as a university of applied sciences. It recognises the future demands of society and industry to which it aims to adapt itself with a critical yet open vision for current issues, such as the current digitalisation of all areas of life. It focuses on continually improving quality and on constant development in research, teaching, and continuing education.

HM

University location

Munich and the surrounding area are well known for their high standard of living. In Munich, tradition and innovation, industry and science, cultural and tourist attractions all contribute to its outstanding quality of life. In fact, the city of Munich ranks among the top three most liveable cities in the world (source: Mercer Quality of Living Survey 2019). Independent surveys and statistics regularly show Munich's economic power, the variety of recreational opportunities, its excellent public transport system, and its exceptionally low crime rate. As one of the leading economic and technical powerhouses in Germany, Munich is a top choice for global companies seeking locations with rich research and development opportunities and strong human capital for their national headquarters, such as Apple and Microsoft, as well as global headquarters like Siemens, BMW, MAN, Linde Group, Allianz, and Munich Re. These companies frequently turn to HM Hochschule München University of Applied Sciences for their R&D needs, and our students participate in faculty research to meet the needs of companies in the region. These relationships also facilitate our students' success in finding internships and placements in industry for independent research projects, which frequently lead to job offers after graduation.

Both academically as well as industrially, the metropolitan area of Munich is established as one of the most important locations for the fields of microtechnology and nanotechnology in Germany and Europe. Academically, this becomes evident by advanced research facilities such as the Center for NanoScience, the "Excellence Network Nanobiotechnology", the NanoTUM, and the Nanosystems Initiative Munich, which is supported by the Excellence Initiative of both the Federal and State governments and of which the Department of Applied Sciences and Mechatronics at the HM Hochschule München University of Applied Sciences is also a member. Outstanding industrial firms such as Siemens AG, Infineon Technologies AG, and the Airbus Group as well as a number of small and mid-sized firms are located in the metropolitan area. In recent years, a significant number of successful start-up firms have arisen from the academic environment Munich provides. The Department of Applied Sciences and Mechatronics, together with our instructors, has outstanding connections to industry providing graduates of the Micro- and Nanotechnology programme with excellent networking opportunities.

The Master's course of study Micro- and Nanotechnology is strongly supported by an industrial advisory board, which includes representatives from companies from southern Germany who are internationally recognised as leaders in their fields.

Contact

Hochschule München University of Applied Sciences
Department of Applied Sciences and Mechatronics

Prof Dr-Ing Christina Schindler

Lothstraße 34
80335 München

christina.schindler@hm.edu
Course website: https://sci.hm.edu/studierende/studiengaenge/master/micro_and_nanotechnology/index.en.html

https://www.facebook.com/HochschuleMuenchen

https://twitter.com/hmmuenchen

https://www.linkedin.com/school/hochschule-muenchen/mycompany/

https://www.instagram.com/hochschulemuenchen/

https://www.youtube.com/channel/UCx-VipFK-0IVI2R2pQD5UOQ

Last update 01.01.2025 18:39:56

International Programmes in Germany - Database

www.daad.de/international-programmes
www.daad.de/sommerkurse

Editor
DAAD - Deutscher Akademischer Austauschdienst e.V.
German Academic Exchange Service
Section K23 – Information on Studying in Germany
Kennedyallee 50
D-53175 Bonn
www.daad.de

GATE-Germany
Consortium for International Higher Education Marketing
www.gate-germany.de

The publication is funded by the German Federal Ministry of Education and Research and by contributions of the participating German institutions of higher education.