

Program and carier opportunities

Engineering physics is the application of physics to real life processes and products. The combination of Physics, Data Science and numerical simulations skills has become necessary for modern technology development, therefore opening bright career opportunities for you.

With applications at focus, your bachelor program includes both internships and a bachelor thesis in collaboration with our industrial partners and research institutes. After successfully completion of your bachelor of science (B.Sc.) you will be able to work as at the very interface between research and technology.

Fields of Activity:

- Technology research and development
- Product design and engineering
- Development of manufacturing, measuring processes
- Analysis, quality assurance, technology marketing



Contact and Information

Department of Applied Sciences and Mechatronics
Lothstr. 34, 80335 Munich, Germany
Tel. ++49 (0)89 1265-1601 or -1602
E-Mail: sekretariat-fk06@hm.edu
Web: sci.hm.edu/index.en.html
Social Media: [hm_fakultaet06](https://www.facebook.com/hm_fakultaet06)

Advisor for Course of Study: Prof. Dr. Ney Moreira
Room: C 203, Tel. ++49 (0)89 1265-1655
E-Mail: ney.moreira@hm.edu

Application

Registration for semester start Oct. 1st
from May 2nd to July 15th

Hochschule München - University of Applied Sciences
Office of Administration and Registration
Lothstr. 34, 80335 Munich, Germany
Tel. ++49 (0)89 1265-5000
E-Mail: beratung@hm.edu
Web: hm.edu/en/index.en.html



The HM Hochschule München University of Applied Sciences is Bavaria's largest institute of higher education in this field. Over 80 attractive and forward-looking degree courses lay the foundation for successful careers. Besides specialist skills, the university promotes sustainable and entrepreneurial mindsets and actions, as well as international and intercultural experiences, such as through stays abroad.

The departments imbue their students with vision, creativeness and a sense of shared responsibility as an ideal preparation for making a difference in their chosen professions and within society. Close contacts to companies at the high-tech location of Munich allow students to obtain practical experience during their studies. And last but not least: Munich's attractive cultural and leisure opportunities offer plenty of variety.

Hochschule
München
University of
Applied Sciences

Department of
Applied Sciences
and Mechatronics | 06

Engineering Physics and Data Science

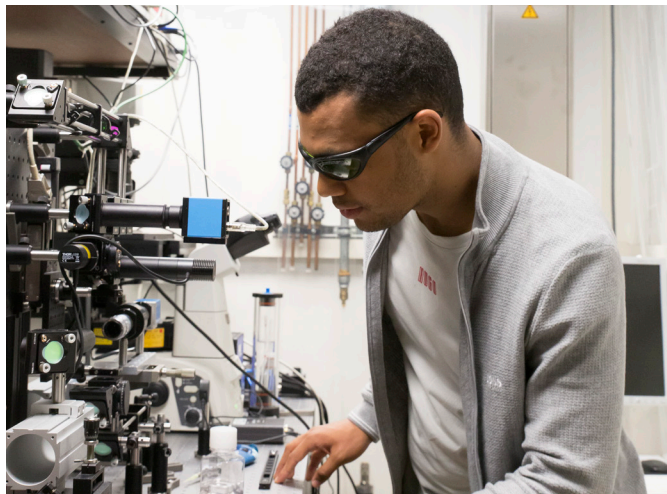


Study objective and content

The program is interdisciplinary. Scientific and technology foundations comprehensively addressed in many laboratory and computer classes. You will develop your analytical, team work and problem solving skills by practicing with actual modern working methods & tools. Professors with extensive industrial experience will make sure your program is up to date with the newest development.

The program comprises three pillars:

- A solid foundation in engineering physics, focusing on the acquisition of scientific data
- A solid and practical knowledge on data science and numerical simulation methods. This pillar aims the understanding and development of virtual computer models in all their forms (e.g. data driven, equation based, advanced hybrid approaches)
- An application oriented study of modern technologies and tools through elective disciplines in the 6th and 7th semesters.



Prerequisite and structure

The language of instruction in all modules is English. The language requirements are B2 in English and A2 in German, the latter must be proven by the end of the second semester at the latest. The prerequisite is a university entrance qualification recognized in Bavaria. For more information see: hm.edu/bewerberinfo

The course comprises six theory semesters and one practical semester. It ends with a four month Bachelor's thesis, which is usually completed in a company or at a research institute.

The practical semester can be completed abroad. A study visit to a university abroad is also possible in the 6th or 7th semester.

Engineering Physics and Data Science Bachelor of Science (B. Sc.)

1. – 2. Semester	Lectures and practical courses in scientific basics
3. – 4. Semester	Lectures and practical courses with focus on data acquisition, data science and numerical simulation
5. Semester	24 weeks Internship in a company or research institute
6. – 7. Semester	Lectures and practical courses with focus on Applications in Science and Technology, Bachelor Thesis

After your Bachelor Degree

If you want to deepen your knowledge, you have the further qualification in the department's Master's degree programs:

- Micro- and Nanotechnology (M.Sc.) (in English)
- Photonics (M.Sc.) (in English)
- Mechatronics (M.Eng.)

Courses and Modules

Compulory	Semester	1	2	3	4	5	6	7
Mathematics		8	7	5				
Physics, Technical Optics, Solid State Physics		7	8	5	5		5	
Chemistry, Physical and Electro-chemistry, Materials Technology		4	6	5	4			
Electrical Engineering and Analog Electronics		4	5					
Sensor Technology, Signal Processing, LabVIEW				5	5			
Modeling, Simulation, Control					6		4	
Computer Science		4	4					
Data Structures and Algorithms				4	5			
Machine Learning and Deep Learning				4	4			
Internship Seminar						2		
Basics of Business Administration						4		
General Studies Modules							4	
Elective (choose 5)							12	8
Energy- and Environmental Technology								
Micro- and Nanotechnology								
Optical and Acoustic Technology								
Modellbildung und Simulation								
Interdisciplinary Module								4
Bachelorseminar								1
Bachelorarbeit								x
Semester weekly Hours (SWS)		27	30	28	29	6	25	13
	Internship							