



Physik-Department



Technische Universität München



from the
smallest
to
infinity

Master's in Applied and Engineering Physics

► Technische Universität München
Physics Department



"We integrate TUM physics students into ongoing research projects early, which is key to being a successful, cutting-edge research program that can compete at the highest level internationally."

Professor Franz Pfeiffer from Germany, Leibniz prize winner (2011)



"TUM gave me a lot of freedom to choose subjects and design my own curriculum, which helped me pursue my interest in the field of my choice."

Niharika Deshpande from India, Master's in Applied and Engineering Physics (2015), now working on her Master's thesis at the Max Planck Institute for Plasma Physics (IPP)

Top University with World-Class Facilities

TUM is known for **teaching and research quality** across the disciplines. Conduct research at **Campus Garching**, one of the **most influential research parks in Europe**, and work in **advanced facilities** like the Center for Nanotechnology and Nanomaterials (ZNN), Center for Advanced Laser Applications (CALA), Walther Meissner Institute for Low Temperature Research (WMI) and Underground Lab for neutrino research.



Why Physics at TUM?

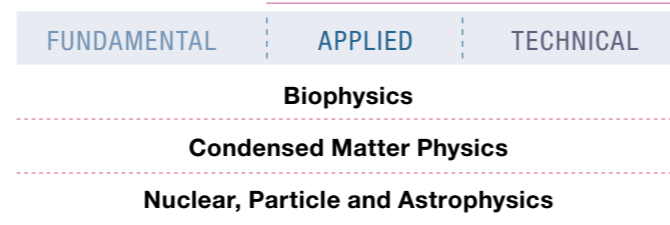
Tradition of Excellence Supports Your Career

Join our tradition: **6 Nobel prizes, 4 Leibniz prizes and 12 European Research Council (ERC) grants** spanning from 1961 to today. With a faculty mentor for every student, here you will enjoy high-quality teaching, transferable skills, flexibility and increased career opportunities.

Research with Depth and Breadth

We cover all the fields of modern physics.

Applied and Engineering Physics Curriculum



Vast Network in Munich and Beyond

Possibilities for collaboration include a network of internationally renowned TUM corporate research centers, partner research institutions on and off campus, collaborative research centers and transregios, Clusters of Excellence and more – **25+ on Campus Garching alone**. Our large number of **international partners** only multiply your possibilities.

Department Fast Facts

- 4** Master's degree programs
- 50+** English-taught physics elective courses
- 40+** research groups

Master's in Applied and Engineering Physics

English-Taught
Elite Endless Options
Massive Research Campus

Join a group of **students and alumni with great achievements**, including international awards, academic and research positions at prestigious universities, research positions in top government and corporate laboratories, successful start-ups and leading positions in industry. And **study in English!**

Unlimited Research Options

Lab courses are **integrated into research groups**, your research will be fully supported by **extraordinary departmental resources**, and you will **devote yourself to research** the entire second year.

New Career Prospects

Gain the qualifications you need to **secure research or leadership positions in industry** or launch your doctoral research via our "direct track."

"TUM offered me fantastic experiences and a unique education for my actual job with solid technical knowledge, training in scientific methodology and the ability to cooperate with international scientific and industry partners."

Dr. Johannes Brunner from Italy, Diploma and Doctorate in Physics (2004), currently Head of Unit Product Development & New Technologies, TIS innovation park and Lecturer for Optical Measurement Technologies and Sensors at MCI Management Center Innsbruck



TOP 15
worldwide
(QS physics ranking)

€20 MILLION
in external research funding each year
for high-risk, high-reward research

Learn more about Applied and Engineering Physics:
www.ph.tum.de/aep

Diverse Specialization Areas

- ▶ Applied Plasma Physics
- ▶ Applied Solid State Physics
- ▶ Energy Physics
- ▶ Experimental Particle Physics
- ▶ Light Sciences
- ▶ Materials Science
- ▶ Medical Physics
- ▶ Semiconductor Physics and Nanotechnology

Flexible Study Options

You can choose from a **broad range of specializations** – and experiment in several areas before choosing your focus. In addition to the "direct track" to the doctorate, we offer **double degree options and exchange semesters** with highly ranked universities worldwide.

Affordable Excellence

There are **no tuition fees**, and the small student fee (under 200€ per semester) gives you access to regional transportation and more. As a student, you can apply for **student jobs, partial grants through TUM** and DAAD cost-of-living scholarships.

Join Us!

Examples from Our 40+ Research Groups

- › Biomedical Physics
- › Biomolecular Nanotechnology
- › Bio-Nanotechnology and Bio-Electronics
- › Dense and Strange Hadronic Matter
- › Engineering Physics and Low Temperature Physics
- › Experimental Physics with Cosmic Particles
- › Experimental Astroparticle Physics
- › Experimental Semiconductor Physics
- › Functional Materials
- › Laser and X-Ray Physics
- › Molecular Engineering at Functional Interfaces
- › Nanotechnology and Nanomaterials
- › Neutron Scattering
- › Nonequilibrium Chemical Physics
- › Physics of Surfaces and Interfaces
- › Physics of Energy Conversion and Storage
- › Physics of Functional Layers
- › Plasma Surface and Divertor Physics
- › Semiconductor Nanostructures and Quantum Systems
- › Soft Matter Physics

Eligibility Requirements

- ▶ English language proficiency, proven with TOEFL, IELTS, Cambridge English, citizenship or degree from English-taught program
- ▶ Bachelor's degree in physics (or equivalent) – application is possible in the last year of Bachelor's studies
- ▶ Passing grade on the aptitude assessment

How to Apply

Winter Semester: Apply January 1 to May 31.
For notification by March 15, apply by January 15.

Summer Semester: Apply September 1 to November 30.

- ▶ Paper application and accompanying documents (notarized and received by deadline)
- ▶ Aptitude assessment (may include an interview)

International Student Service Center

We assist you every step of the way, from application to your housing hunt to your job search. Munich is beautiful, has great public transportation and lots to do! Get the practical info: www.tum.de/international-students



"I came here with the idea of broadening my knowledge on condensed matter, but then came across astroparticle physics and got quite fascinated by it. I decided to work with cryogenic detectors for a semester, and after this, it was straightforward to start my Master's thesis in this very same group, carrying on with my previous work. All of this was possible thanks to the multiple chances one has as a student at TUM!"

Elizabeth Mondragon from Colombia, Master's in Applied and Engineering Physics (2016)

HIGH-TECH HOTBED FOR INNOVATIVE APPLICATIONS

Neighboring departments for multidisciplinary study and research: mechanical engineering, chemical engineering, computer sciences, etc.

Leading companies in Munich: BMW Group, Infineon Technologies, GE Global Research, Rohde & Schwarz, Siemens, etc.

Entrepreneurship Center on Campus Garching

Ask Us! Dr. Maria Eckholt (International Affairs) and Dr. Martin Sass (Master's programs) would be delighted to speak with you further about studying at the TUM Physics Department.

master@ph.tum.de

Learn more and apply:
www.ph.tum.de

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