Facts and Figures:

Diploma:	MSc Applied Physics
Credits:	120 ECTS, 2 years (4 semesters)
Language of instruction:	English
Start:	October (winter semester) or April (summer semester)
Application deadlines:	15 July / 15 January
Requirements:	BSc in Physics, outstanding performance, English proficiency
Study fees:	€ 1.500 per semester for international students from non-EU countries, no study fees for students from EU countries
Administrative semester fees:	€ 161 per semester

Information on study fees:
https://www.studium.uni-freiburg.de/en/student-services/study-fees

Monthly living costs in Freiburg are about €800 to €900 total.

How to apply (online only):

Within this application period, please register and log in to the online application portal (https://campus.uni-freiburg.de). Fill the required information and upload the requested documents:

- your undergraduate diploma (including translated copy in English or German)
- your transcript of marks / transcript of records (including translated copy in English or German)
- proof of English proficiency (B2-level), e.g. TOEFL, IELTS, or English medium of instruction certificate
- Curriculum vitae and Statement of Intent

Information on application process:
http://www.physik.uni-freiburg.de/studium-en/MSc_ApplPhysics

Contact:

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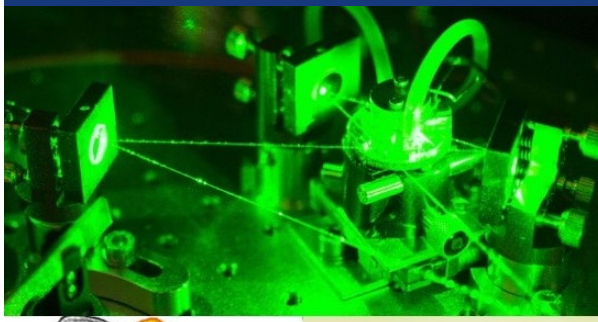
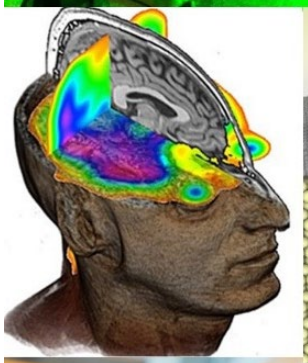
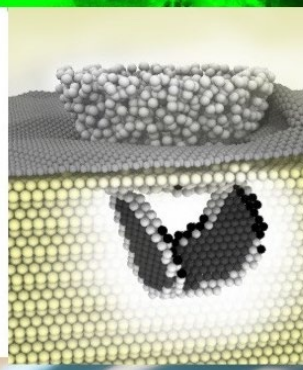
Master of Science

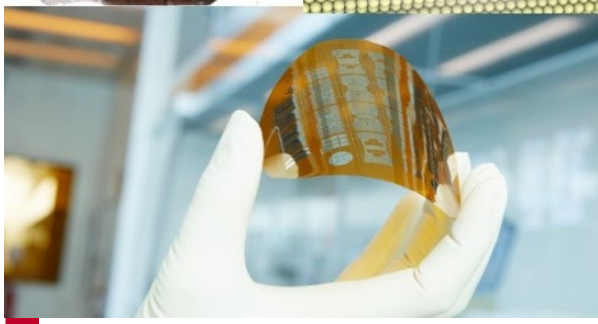
Applied Physics

University of Freiburg
Institute of Physics







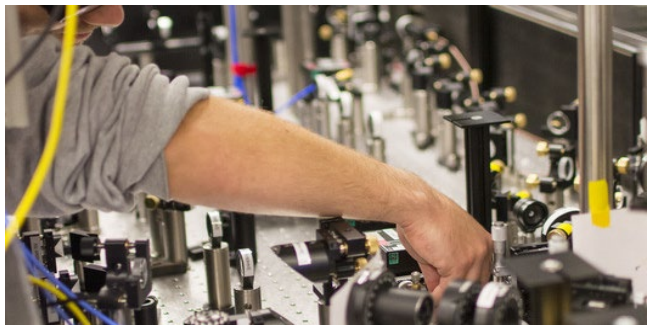


UNI FREIBURG

Abert-Ludwigs-Universität Freiburg

The Master Program

The English-taught M.Sc. Applied Physics provides an interdisciplinary study program at the interface between fundamental physical concepts and resulting modern technologies. Participants will deepen their knowledge in modern physics and are introduced to central methods of physical research like measuring techniques, methods for data analysis or numerical simulation. In cooperation with associated institutes of the university, the university medical center and with the Fraunhofer Institutes in Freiburg, the Master program offers the possibility for specialization in a particular area of applied physics, such as **Optical Technologies**, **Physics in Life Sciences and Medical Physics**, **Interactive and Adaptive Materials**, or **Applied Physics Methods**. Successful completion of the Master program qualifies for a career at interdisciplinary research institutions, or a profession in industry.



The Master program is designed for highly qualified graduate students holding a Bachelor degree in physics. Master students will have the opportunity to

- be involved in cutting-edge research in applied physics with internationally renowned professors.
- benefit from a nation-wide unique research environment established by the Physics Institute, the local Fraunhofer institutes, the university medical center, and other research centers & faculties at the university.
- live in one of Germany's most appealing cities.

Freiburg City located in the Black Forest

Module Overview

Total: 120 ECTS

Advanced Experimental Physics (9 ECTS)
Choose one from various lectures offered each year, e.g.
- Advanced Atomic and Molecular Physics
- Advanced Optics and Lasers
- Condensed Matter I: Solid State Physics
- Condensed Matter II: Interfaces and Nanostructures

Advanced Theoretical Physics (9 ECTS)
Choose one from various lectures offered each year, e.g.
- Advanced Quantum Mechanics
- Theoretical Condensed Matter Physics
- Classical Complex Systems
- Complex Quantum Systems
- Theoretical Quantum Optics

Applied Physics (18 ECTS)
Choose from various lectures on modern topics in applied physics, e.g.

Topic A: Optical Technologies
- Physics of Microscopy and Image Formation
- Nano-Photonics - Optical manipulation and particle dynamics
- Wave Optics
- Laser-based Spectroscopy and Analytical Methods
- Photovoltaic Energy Conversion
- Fundamentals of Semiconductors & Optoelectronics

Topic B: Physics in Life Sciences & Medical Physics
- Dynamic Systems in Biology
- Molecular Dynamics & Spectroscopy
- Physics of Nano-Biosystems
- Biophysics
- Physics of Medical Imaging Methods
- Biophysics of Cardiac Function and Signals
- Neuroscience: Models of Neurons and Networks

Topic C: Interactive and Adaptive Materials
- Polymer Physics
- Physical Processes of Self-Assembly and Pattern Formation
- Theory and Modelling of Materials
- Computational Physics: Materials Science
- Quantum Transport

Topic D: Applied Physics Methods
- Low Temperature Physics
- Particle Detectors
- Statistics and Numerics
- Modelling and System Identification
- Complex Networks

Term Paper - Seminar (6 ECTS)
Choose from various topics offered each semester.

Master Laboratory Applied Physics (8 ECTS)
Choose from a range of lab experiments.

Elective Subjects (10 ECTS)
Your choice of courses from our Institute and/or other master programs.

Research Traineeship (30 ECTS)

Master Thesis (30 ECTS)

The Institute of Physics and cooperating Institutes

With currently 22 professors, the Institute of Physics is actively involved in a wide range of modern research areas. Students benefit from this broad range of topics covered in lecture courses and seminars. The diversity and quality of the research and teaching program of our institute, embedded in the rich and interdisciplinary research landscape defined through the university and other institutions committed to research and development in the larger Freiburg area are key ingredients for the attractiveness of the institute nation-wide, but also on the international level. At present, 570 students are enrolled for Bachelor and Master studies, 130 students work on their PhD, and more than 70 young researchers are at the PostDoc stage of their career. The Institute of Physics succeeded to establish internationally well-recognized Research Training Groups Research Units providing first class post-graduate training.

Apart from the Institute of Physics also the University Clinical Research Center, as well as the departments of chemistry, microsystems engineering, and biology participate in this Master program by contributing lectures and experimental courses. As Europe's largest application-oriented research organization the Fraunhofer Society runs five institutes in Freiburg, which conduct applications-oriented research into the areas of energy, security, communications, environment, health, production technology and mobility. With a local staff of about 2000 employees Freiburg is the largest Fraunhofer location in Germany. The local Fraunhofer institutes contribute dedicated master courses and offer excellent opportunities for conducting the final master's thesis.

Freiburg and its University

Freiburg: best known for its high quality of life
The so-called Capital of the Black Forest enjoys more hours of sunshine than any other city in Germany and has a unique and charming atmosphere. Globally, it is also known as the "Green City" because of its high standards in environmental sustainability. Freiburg's surroundings offer excellent facilities for skiing, hiking, cycling and mountain biking. With a total of 30,000 students in a population of 224,000, Freiburg is clearly a student town.

The University: a venerable and international institution
Founded in 1457, the University of Freiburg is one of the oldest and most renowned higher education institutions in Germany. We have partnerships with top universities, research institutions and businesses around the world and are proud to be a truly international university. With close to 3,500 international students and many internationally acclaimed scholars, the university offers a cosmopolitan and diverse atmosphere.