



Master of Science in Physics

Graduate Program for International Careers in Research

Program's Structure

Study Phase

- 2 semesters
- lab courses
- lectures & seminars



Research Phase

- 2 semesters
- join a research group
- master thesis

Recommended Schedule

Semester 1	Semester 2	Semester 3	Semester 4
Study Phase		Research Phase	
Compulsory Modul Advanced Laboratory Course 10 CP	Compulsory Modul Selected Topics: Scientific Presentations 5 CP	Compulsory Modul Scientific Specialisation 15 CP	Master's Thesis & Colloquium 30 CP
20 CP Compulsory Elective Module At least 10 CP in Theoretical Physics		Compulsory Modul Methodology and Project Planning 15 CP	
Modul Elective 10 CP	Modul Elective 15 CP		

Plenty of freedom to choose!

Recommended schedule

Semester 1	Semester 2
Study Phase	
Compulsory Modul Advanced Laboratory Course 10 CP	compulsory Modul Selected Topics: Scientific Presentations 5 CP
20 CP Compulsory Elective Module At least 10 CP in Theoretical Physics	
Module Elective 10 CP	Module Elective 15 CP

Theoretical Physics

Advanced Quantum Mechanics (10 CP),
Statistical Physics and Thermodynamics (10 CP),
Advanced Statistical Physics (10 CP),
Quantum Field Theory and Many-Body Physics (10 CP).

Experimental Physics

Advanced Solid State Physics (10 CP),
Advanced Atomic and Molecular Physics (10 CP),
Advanced Biophysics (10 CP).

Recommended schedule

Semester 1	Semester 2
Study Phase	
Compulsory Modul Advanced Laboratory Course 10 CP	compulsory Modul Selected Topics: Scientific Presentations 5 CP
20 CP Compulsory Elective Module At least 10 CP in Theoretical Physics	
Module Elective 10 CP	Module Elective 15 CP

Theoretical Condensed Matter Physics (10 CP)
 Nanophysics (5 CP)
 Magnetism and Spin Electronics (5 CP)
 Surface Science (5 CP)
 Theory of Light-Matter Interaction (10 CP)
 Advanced Optics (10 CP),
 Ultrafast Spectroscopy and Nonlinear Optics (5 CP)
 Photobiophysics (5 CP)
 Special Topics in Molecular Biophysics (5 CP)
 Advanced Biospectroscopy (5 CP)
 Semiconductor Physics (5 CP)
 Advanced Astronomy and Astrophysics (12 CP)
 Quantum Information Theory (10 CP),
 Advanced Computational Physics (10 CP),
 Signal Analysis for Physicist (8 CP),
 Physics and Chemistry of Sustainability I (5 CP),
 Science Studies in Physics (5 CP),
 Science Studies Communication (5 CP),
 Modern Theoretical Physics A (5 CP),
 Modern Theoretical Physics B (8 CP),
 Modern Theoretical Physics C (10 CP),
 Modern Experimental Physics A (5 CP),
 Modern Experimental Physics B (8 CP),
 Modern Experimental Physics C (10 CP),
 Modern Physics: Scientific Presentation (5 CP).

Program's Structure

Study Phase

- 2 semesters
- lab courses
- lectures & seminars



Research Phase

- 2 semesters
- join a research group
- master thesis

Research Focus

www.physik.fu-berlin.de/research

Experimental Physics - Our Research Groups

In experimental physics, we observe elementary physical processes and experiment with physical phenomena. We gather the data about the universe to explain the basic properties of materials, proteins, atoms, and molecules on surfaces.



Research Group Bittl

- › Electron Spin Resonance and Single Molecule Spectroscopy



Research Group Bolotin

- › Quantum nanoelectronics of 2D materials



AG Christiansen

- Adjoint Professor, Fraunhofer Institute for Ceramic Technologies and Systems IKTS
- › Nanoarchitectures for energy conversion



Research Group Dau

- Senior Professor
- › Biophysics and Photosynthesis



Research Group Kampfrath

- › Terahertz Physics of Quantum Materials



Research Group Kuch

- › Spectroscopy and spectromicroscopy of new magnetic materials



AG Lips

- Adjoint Professor, Helmholtz-Zentrum Berlin
- › Spins in Energy Conversion and Quantum Information Science



Research Group Müller

- Emmy Noether Junior Research Group
- › Interdisciplinary Nanophotonics

Theoretical Physics - Our Research Groups

Theoretical physicists develop mathematical models and abstractions for physical objects and systems to explain, predict, and simulate natural phenomena.



Research Group Breitzkreiz

Emmy Noether Junior Research Group

- › Microscopic and Nanoscopic Physics of Topological Metals



Research Group Netz

- › Theoretical Bio- and Soft Matter Physics



Research Group Brouwer

- › Theoretical Mesoscopic Physics



Research Group von Oppen

- › Theory of Quantum Transport



Research Group Clementi

- › Theoretical and Computational Biophysics



Research Group Ordóñez

- Emmy Noether Junior Research Group
- › Chiral Light-Matter Interactions



Research Group Eisert

- › Quantum many-body theory, quantum information theory, and quantum optics



Research Group Reuther

- Adjunct Professor, Joint Lab with HZB
- › Theory of Quantum Magnetism



Research Group Jahn

Einstein Research Unit Junior Research Group

- › Quantum Information and Holographic Dualities



Research Group Sharma

Joint professorship with the Max Born Institute

- › Theoretical Solid State Physics



Research Group Koch

- › Quantum dynamics and control

› Image Credits

Contacts

Master's Program Coordinator

Prof. Dr. Cecilia Clementi

masterstudium@physik.fu-berlin.de



Officer for Studies and Teaching

Dr. Nicole Rudolph-Mohr

n.rudolph-mohr@physik.fu-berlin.de

