

COURSES OFFERED

M.Sc. Quantum Information Theory

Winter Semester 2026/2027

This overview is based on the current course catalogue and has been cross-checked against the programme's module handbook (version dated 13 April 2026) and study regulations. Final credit recognition is subject to the applicable module assignment.

1. Foundations of Quantum Information Theory

Course title	Lecturer
Mathematical Foundations of Quantum Information	Weber

2. Specialised Lectures in Quantum Information Theory

Course title	Lecturer
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3. Interdisciplinary Courses

Mathematics, see [Core Lectures and Core Elective Lectures in Mathematics](#)

Course title	Lecturer
Algebra	Steinhart
Algebraic Geometry	Lazic
Differential Equations in Image Processing and Computer Vision	Weickert
Functional Analysis I	Weber
Function Spaces with Applications	Rupp
General Topology	Piroddi
Hilbert Function Spaces	Hartz
Image Acquisition Methods	Peter
Life Insurance Mathematics	Herzberg
Numerical Algorithms for Visual Computing	Weickert, Chizhov
Optimal Transport	Sachse
Random Matrices and Applications in Quantum Information	Speicher
Representations of Finite Groups	Billi
Stochastics II	Zähle
Time Series Analysis	Zähle

Computer Science, see [Core Lectures and Advanced Lectures in Computer Science](#)

Course title	Lecturer
3D and 4D Computer Vision	Golyanik
Advanced Topics in Operating Systems	Brinkmann
Artificial Intelligence	Hoffmann
Automated Reasoning	Weidenbach
Computer Graphics	Slusallek
Database Systems	Dittrich
Digital Transmission, Signal Processing	Herfet
Elements of Machine Learning	Magliacane
Empirical Software Engineering Research	Apel
Formal Analysis of Real-World Security Protocols	Cremers
Human Computer Interaction	Steimle
Imprecise Probabilistic Machine Learning	Muandet
Natural Computing and Algorithms	Bläser
Neural Networks: Theory and Implementation	Klakow
Program Analysis	Reineke
Security	Tippenhauer
Software Engineering	Apel
Statistical Data Compression	Rahmann
Statistics with R	Demberg
Systems Security	Abbasi
Visual Generative Models	Lenssen

Physics, see also [here](#)

Course title	Lecturer
Introduction to Quantum Information Processing - Theoretical Physics Elective	Wilhelm-Mauch
Experimental Physics IVa: Solid-State Physics I (EP IV)	Becher
Experimental Physics Va: Atomic and Molecular Physics / Physics of Atoms and Molecules	Eschner
Information Technology Fundamentals for Physicists I	Hoffmann
Physics of Phase Transitions (Physics Elective)	Henkel
Physics of Trapped and Cold Atoms	Eschner
Quantum Field Theory	Bruschi
Theoretical Physics II	Hub, Hövel

Course title	Lecturer
Theoretical Physics IV: Quantum Physics and Statistical Physics - Advanced Concepts	Rieger

4. Seminar in Quantum Information Theory

Course title	Lecturer
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Note: The course offer and teaching assignments may still change. Upon request, other courses may also be attended. You should always check what language the course is taught in.