

Module title				Abbreviation
FOKUS Quantum Information Technology				11-FM-QUI-132-m01
Module coordinator			Module offered by	
Managing Director of the Institute of Ap		pplied Physics Faculty of Physics and Astronomy		
ECTS Method of grading		Only after succ. compl. of module(s)		
10 num	erical grade			
Duration Module level Other prerequisit		Other prerequisites	5	
1 semester graduate				
Contents				
Basic concepts of quantum mechanics, quantum bits and algorithms, quantal measurements, experimental ap- proaches towards quantum computing (on the basis of photons, ions and nuclear spins), quantum operations and quantum noise, quantum information and communication.				
Intended learning outcomes				
The students have special and advanced knowledge of independent scientific work in the field of quantum infor- mation, they are able to reproduce the acquired knowledge, to apply the acquired methods, to summarise a sub- area of the current research area in an oral presentation and to successfully implement the acquired knowledge and methods in a mini research project.				
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)				
Quanteninformationstechnologie (Quantum Information Technology): V (3 weekly contact hours) + Ü/P (1 weekly contact hour), German or English, once a year (winter semester) Kompaktseminar Quanteninformationstechnologie (Block Taught Seminar Quantum Information Technology): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (3 days), usually held during semester break)				
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)				
<ul> <li>This module has the following assessment components</li> <li>1. Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages)</li> <li>2. Seminar: talk (approx. 30 to 45 minutes)</li> </ul>				
Assessment components 1 and 2 will be offered in German or English. Students must register for assessment components 1 and 2 online (details to be announced). Assessment component 1 will be offered once a year in the winter semester; details on when assessment compo- nent 2 will be offered to be announced. To pass this module, students must pass both assessment component 1 and assessment component 2.				
Allocation of places				
Additional information				
Workload				
Teaching cyc	le			
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)				
Module appe	ars in			

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Master's degree (1 major) FOKUS Physics (2011)

JMU Würzburg • generated 18.04.2025 • Module data record 112787