### Module title
Quantum Information Technology

### Abbreviation
11-QUI-132-m01

### Module coordinator
Managing Director of the Institute of Applied Physics

### Module offered by
Faculty of Physics and Astronomy

### ECTS
6

### Method of grading
Only after succ. compl. of module(s)

### Duration
1 semester

### Module level
graduate

### Other prerequisites
--

### Contents
Basic concepts of quantum mechanics, quantum bits and algorithms, quantal measurements, experimental approaches 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 are familiar with the basic quantum mechanical terms of quantum information technology. They know experimental approaches for the realisation of quantum computers and for the transfer of quantum information.

### Courses
V + R (no information on SWS (weekly contact hours) and course language available)

### Method of assessment
(a) written examination (approx. 90 minutes) or (b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate) or (c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or (d) presentation/seminar presentation (approx. 30 minutes)

Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.

Language of assessment: German, English

### Allocation of places
--

### Additional information
--

### Referred to in LPO I
(examination regulations for teaching-degree programmes)

### Module appears in
- Master's degree (1 major) Physics (2010)
- Master's degree (1 major) Physics (2011)
- Master's degree (1 major) Nanostructure Technology (2011)
- Master's degree (1 major) Nanostructure Technology (2010)
- Master's degree (1 major) FOKUS Physics (2010)
- Master's degree (1 major) FOKUS Physics (2011)