Module: Elective Advanced Lectures: Theoretical Physics

Module No.: physics70c

Course: universitätbonn   Quantum Computing (T)

Course No.: physics7508

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	3+2	7	WT/ST

Requirements for Participation:

Preparation:
Theoretical courses at the Bachelor degree level

Form of Testing and Examination:
written / oral examination

Length of Course:
1 semester

Aims of the Course:
Understand the theory of quantum computing and apply it to existing hardware.

Contents of the Course:
- Quantum circuits
- Quantum algorithms
- Quantum computers
- Quantum noise and quantum operations
- Quantum error correction

Recommended Literature:
M. A. Nielsen and I. L. Chuang, Quantum Computation and Quantum Information, Cambridge