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| Department | 06 Applied Sciences and Mechatronics |
| Course title | Quantum Physics II |
| Hours per week (SWS) | 4 |
| Number of ECTS credits | 6 |
| Course objective | The participants gain a comprehensive overview in the field of Quantum physics with special focus on applications like superconducting qubits, quantized transport, single electron transistors and quantum mechanical ground state of motion of nanosized objects. The students have an improved understanding of approaches to describe quantum states in applications. |
| Prerequisites | Quantum Physics I |
| Recommended reading | 1. R. Waser, Nanoelectronics and Information Technology: Materials, Processes, Devices, Wiley-VCH. |
| Teaching methods | Lecture, Exercise session |
| Assessment methods | written exam |
| Language of instruction | English |
| Name of lecturer | Prof. Matthias Gramich |
| Email | matthias.gramich@hm.edu |
| Link | https://sci-intern.hm.edu/fk/modulbeschreibungen.php?id=1466 |
| Course content | Quantized transport phenomena in low dimensional systems, Superconducting circuits, graphene, Josephson physics, JWKB approximation, tunnel diodes, quantum hall effect, q-bit realization, single electron transistor, 2 dimensional electron gas, experimental realizations of quantum wells. |
| Remarks | |