QWORLD

UNIVERSITY OF LATVIA
FACULTY OF SCIENCE
AND TECHNOLOGY

QCOURSE 501-2

Elements of Quantum Computing and Programming

September 2024 - December 2024

CERTIFICATE

Diego Gerwig

passed QCourse 501-2 with grade 93 out of 100

Graduate level, 3 ECTS credits
(32 academic hours and 48 individual study hours)
Accreditation: This edition was conducted in collaboration with the Department of Computer Science (Faculty of Science and Technology, University of Latvia) based on DatZD014 “Elements of Quantum Computing and Programming”.

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(Head of Department Computer Science, University of Latvia)	(University of Latvia & QWorld)	(QWorld)

QKD lecturer: Dr. Aeysha Khalique (NUST Islamabad)

QCourse501-2-48

Base content: Review of Python, mathematics, and quantum mechanics. Basics of classical and quantum systems. Superposition and measurement. Operations on real-valued qubits. Entanglement, superdense coding, and quantum teleportation. Bloch sphere and complex-valued quantum operators.
Self-study module “Quantum Key Distribution”: Classical cryptography & compromised security, quantum features leading to quantum cryptography, BB84, BBM92, Security Analysis & Adversary Attacks.

Latvijas Kvantu iniciatīva