QWORLD

UNIVERSITY OF LATVIA
FACULTY OF COMPUTING

QCOURSE 501-1

Elements of Quantum Computing and Programming

September 2023 - January 2024

CERTIFICATE

Diego Gerwig López

passed QCourse 501-1 with grade 65.62 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 Faculty of Computing, University of Latvia based on
DatZ7109 “Elements of Quantum Computing and Programming”.

Zane Bičevska
Prof. Zane Bičevska
(Dean - Faculty of Computing,
University of Latvia)

Abuzer Yakaryilmaz
Dr. Abuzer Yakaryilmaz
(University of Latvia
& QWorld)

Claudia Zendejas-Morales
Claudia Zendejas-Morales
(QWorld)

QKD lecturer: Dr. Aeysha Khalique (NUST Islamabad)

QCourse501-1-214

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.

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