QWORLD

UNIVERSITY OF LATVIA
FACULTY OF COMPUTING

QCOURSE 504-1

Elementary Quantum Algorithms

February 2024 - May 2024

CERTIFICATE

Diego Gerwig López

passed QCourse 504-1 with grade 67.3 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 DatZ7111 “Elementary Quantum Algorithms”.

Zane Bičevska

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

Jibran Rashid

Dr. Jibran Rashid
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Claudia Zendejas-Morales

Claudia Zendejas-Morales
(QWorld)

QEC lecturer: Dr. Abdullah Khalid (QWorld)

QCourse504-1-91

Base content: Conventional quantum algorithms (Deutsch Algorithm, Deutsch-Jozsa Algorithm, Bernstein-Vazirani Algorithm, Simon’s Algorithm), Grover’s search algorithm & Solving Max-Cut problem using Grover’s Search, Quantum Fourier Transform & phase estimation, Shor’s algorithm.

Self-study module “Quantum Error Correction”: Classical error-correction, Quantum repetition codes, Shor code, Quantum stabilizer codes (theory, encoding circuits, decoding circuits, and syndrome measurement circuits).

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