

QUANTUM COMMUNICATIONS & NETWORKING

Certified Quantum Network Architect

CQNA TRAINING

Design quantum networking architectures, key management and deployment plans for enterprise and government requirements.

ON DEMAND

~40 hours

Self-paced

LIVE TRAINING

24 hours

Across four days

LEVEL

Advanced

Certification preparation

Design deployable quantum networks.

WHAT YOU WILL LEARN

- ✓ Select QKD systems using security, performance and operational criteria.
- ✓ Design key management and trusted-node architectures.
- ✓ Assess satellite and hybrid QKD-PQC network approaches.
- ✓ Develop deployment plans, cost analyses and security architecture.

WHO SHOULD ATTEND

Network and security architects, telecom designers, and senior infrastructure professionals responsible for quantum networking solutions.

PREREQUISITES

Active Certified Quantum Network Engineer (CQNE) certification is required.

Preparation for the CQNA certification

Completing training does not confer the credential. You must pass the separate exam.

What you will study

Seven modules connecting core concepts with applied professional decisions.

01 QKD System Evaluation and Selection

Compare vendors using realistic key rates, fiber performance and integration interfaces. Evaluate total cost, installation, maintenance and key-management integration.

02 Key Management Architecture

Design key delivery from QKD endpoints to encryption devices. Address storage, relay, usage and retirement across link, network and application layers.

03 Trusted-Node Network Design

Define trust assumptions, physical security, relay protocols and monitoring. Balance deployment costs against security and operational requirements.

04 Satellite QKD Architecture

Evaluate orbital and ground-station options, atmospheric effects and terrestrial integration. Distinguish demonstrated satellite capabilities from planned systems.

05 Hybrid QKD-PQC Network Design

Assess where QKD adds value and where PQC alone is sufficient. Design combined architectures and evaluate key-management and cost implications.

06 Metro and Long-Haul Deployment Planning

Plan fiber routes, node placement, key capacity and phased deployment. Integrate metro and long-haul quantum links with existing telecom infrastructure.

07 Network Security Architecture

Develop threat models, defense-in-depth, monitoring and incident response. Document security architecture and assess assurance requirements for quantum-secured communications.

Applied learning

The course draws on Quantum Systems Integration by Marin Ivezic and faculty experience with quantum engineering teams. Design decisions connect security assumptions with deployment constraints.

Plan your participation

Training formats and fees

Online on-demand	US\$2,499
Live online	US\$2,999
In person	US\$3,499
Private team training	Custom quote

Live online and in-person delivery: four days, six hours of instruction per day. On-demand delivery: approximately 40 hours at your own pace.

Includes a certificate of completion. This is not a professional certification.

Included with training

- Course handbook with the full material and written instructor notes.
- PDF copy of Quantum Systems Integration by Marin Ivezić, included at no extra cost.
- 180 days of online on-demand access. Where that course is not yet published, the 180 days start on the day it is.

Training and exam options

On-demand + exam	US\$2,999
In-person + exam	US\$3,999
Exam only	US\$699

Quantum Networking Path: US\$4,499 online
CQNE + CQNA training and both exams. CQNE must be active before CQNA training.

The CQNA exam

120 questions: 110 scored + 10 unscored pilot items.

180 minutes; closed book; proctored.

Multiple-choice and scenario questions.

Passing score: 700 on a 100-900 scale.

Plan 30-50 hours of independent study in addition to the course.

After certification

Extend into QCSP for quantum-system security, or Quantum-Safe Telecommunications for carrier-network migration and operational context.

Three-year validity. US\$149 annual maintenance covers all active Quantum Academy credentials. See the [credential page](#) for renewal and exam terms.

Explore dates and enrollment

View the CQNA program at QuantumAcademy.com



On-demand enrollment opens soon. Check the course page for live dates and availability.

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Prices: September 2026; applicable taxes are shown at checkout. Quantum Academy credentials are private professional credentials of Post-Quantum Institute, not government-issued licenses, accredited degrees or academic credit. No employment, promotion, regulatory approval or specific outcome is guaranteed. Programs are educational and informational only, not legal, compliance or engineering advice.