QUANTUM COMPUTING CERTIFICATION

As per International Standards

UNICHRONE

Unichrone Training Advantages

- 1 Day Interactive Instructor-led Online/Classroom or Group Training
- Course study materials designed by subject matter experts
- Mock Tests to prepare in a best way
- Highly qualified, expert & accredited trainers with vast experience
- Enrich with Industry best practices and case studies and present trends
- Quantum Computing Training Course adhered with International Standards
- End-to-end support via phone, mail, and chat
- Convenient Weekday/weekend Quantum Computing Training Course schedule

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About Unichrone

We are a professional training institute with an extensive portfolio of professional certification courses. Our training programs are meant for those who want to expand their horizons by acquiring professional certifications across the spectrum. We train small- and medium-sized organizations all around the world, including in USA, Canada, Australia, UK, Ireland and Germany.

Guaranteed Quality

Handpicked Trainers

Global Presence

Online Training Option

We've trained professionals across global companies

PHILIPS
AXCESS FINANCIAL PRODUCT MANAGEMENT
CLARIANT
AkerSolutions
WÜRTH
baycoat
DUPONT
DASHTI
GlobalSign
Triskelelabs
مصرف الراجحي Al Rajhi Bank
DHL
ARASCO أراسكو

EMERSON
accenture
VOLVO
AMA AMERICAN MEDICAL ASSOCIATION
sitel group
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Importance of Quantum Computing Training

- Quantum Computing Certification indicates the pinnacle of modern technological education. This attestation enables professionals to harness the power of quantum mechanics for revolutionary computational breakthroughs. This helps professionals with every key knowledge to excel in this quantum era spanning all organizational hierarchies. It can be procured by many professionals, such as IT professionals and researchers. It boosts the potential of a professional in various aspects like Quantum mechanics, Qubits, and Quantum Memory. They gain a comprehensive understanding of Quantum Mechanics principles and their groundbreaking applications in computing.

- Quantum Computing Course provides an individual with all that is needed to know about quantum mechanics, linear algebra, and computational sciences. It explores concepts such as the basics of qubits, superposition, entanglement, and gates in the quantum circuit. They learn to develop quantum algorithms for simulation, machine learning, cryptography, and many other applications. Moreover, training may also include topics dealing with quantum hardware and software, so participants can try out the application of quantum computers.

ELIGIBILITY CRITERIA

- Aspirants need not meet any requirements to pursue Quantum Computing Training Course. However, having prior knowledge is beneficial.

WHO SHOULD ATTEND

- Any individual who wants to gain skills in Quantum Computing can enroll in the Quantum Computing Training course.

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QUANTUM COMPUTING CERTIFICATION ADVANTAGES

Syllabus of Quantum Computing Training

Lesson 01 – Introduction to Quantum Computing	
1.	What is Quantum Computing?
2.	Quantum Mechanics
3.	Qubits and Quantum Memory
4.	Elementary Gates

Lesson 2 – Overview of Circuit Model and Deutsch-Jozsa	
1.	Classical Circuits
2.	Quantum Circuits
3.	Universality of Various Sets of Elementary Gates
4.	Quantum Parallelism
5.	Early Algorithms

Syllabus of Quantum Computing Training

Lesson 03 – Simon's Algorithm and Fourier Transform	
1.	Simon's Algorithm
2.	Problem
3.	Quantum Algorithm
4.	Classical Algorithms for Simon's Problem

Lesson 04 – Fast Fourier Transform	
1.	Classical Discrete Fourier Transform
2.	Fast Fourier Transform
3.	Application: Multiplying Two Polynomials
4.	Quantum Fourier Transform

Syllabus of Quantum Computing Training

Lesson 05 – Shor’s Factoring Algorithm	
1.	Factoring
2.	Shor's Period-Finding Algorithm
3.	Continued Fractions

Lesson 06 – Hidden Subgroup Problem	
1.	Group Theory Reminder
2.	A General Algorithm for Abelian HSP
3.	Non-Abelian QFT on Coset States

Syllabus of Quantum Computing Training

Lesson 07 – Grover's Search and Quantum Walk Algorithm	
1.	Grover's Algorithm
2.	Amplitude Amplification
3.	Quantum Walk
4.	Applications

Lesson 08 – Hamiltonian Simulation and HHL Algorithm	
1.	Hamiltonians
2.	Methods of Hamiltonian Simulation

Syllabus of Quantum Computing Training

Lesson 09 – Introduction to HHL Algorithm	
1.	What is HHL Algorithm?
2.	Linear System Problem
3.	HHL Algorithm for Linear Systems
4.	Improving HHL Algorithm Complexity

Lesson 10 – Quantum Query Lower Bounds	
1.	Introduction
2.	Polynomial Method
3.	Quantum Adversary Method

Syllabus of Quantum Computing Training

Lesson 11 – Quantum Complexity Theory	
1.	Introduction to Quantum Complexity Theory
2.	Classical and Quantum Complexity Classes
3.	Classically Simulating Quantum Computers in Polynomial Space

Lesson 12 – Quantum Encodings with a Non-Quantum Application	
1.	Mixed States and General Measurements
2.	Quantum Encodings and Their Limits
3.	Lower Bounds on Locally Decodable Codes

Syllabus of Quantum Computing Training

Lesson 13 – Quantum Communication Complexity	
1.	Classical Communication Complexity
2.	Quantum Question

Lesson 14 – Entanglement and Non-Locality	
1.	Quantum Non-Locality
2.	CHSH: Clauser-Horne-Shimony-Holt
3.	Magic Square Game

Syllabus of Quantum Computing Training

Lesson 15 – Introduction to Quantum Cryptography	
1.	Quantum Key Distribution
2.	Reduced Density Matrices and the Schmidt Decomposition
3.	Impossibility of Perfect Bit Commitment

Lesson 16 – Error-Correction and Fault-Tolerance	
1.	Introduction
2.	Classical Error-Correction
3.	Quantum Errors
4.	Quantum Error-Correcting Codes
5.	Fault-Tolerant Quantum Computation
6.	Concatenated Codes and the Threshold Theorem

Exam Format of Quantum Computing Certification

Examination Format	
Exam Name	**Quantum Computing Exam**
Exam Format	Multiple Choice
Total Questions & Duration	30 Questions, 1 Hour
Passing Score	Minimum passing score of 70%
Exam Cost	Included in training fee

To get you fully prepared with the knowledge and skills for Quantum Computing, a training session at Unichrone gives immense importance to mock questions at the end of every module and problem-solving exercises within the session. Prepared by certified faculty, the practice tests are a true simulation of the Quantum Computing exam.

Contact Us

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