

Arcitura Blockchain Architect Training

OEM: Arcitura • Duration: 3 Days (24 hrs) • Code: ARC-BC

COURSE MODULES & TOPICS

Module 1: Fundamental Blockchain

- Benefits and Challenges of Blockchain
- Blockchain Business Drivers and Technology Drivers
- Understanding Blockchain's Decentralized Model
- Blockchain Value Propositions
- How Blockchain Can be Used for Different Industries
- Blockchain Applications, Networks and the Distributed Ledger
- How the Distributed Ledger Can Relate to Relational Database
- Fundamental Components of a Blockchain Architecture
- Transactions, Records and Pools
- Blocks, Chains and Block Headers
- Blockchain Users, Full Nodes and Partial Nodes
- Step-by-Step Understanding of the Record and Block Lifecycle
- Step-by-Step Understanding of How the Merkle Tree Works
- Step-by-Step Understanding of How Consensus Works
- Consensus Algorithms (PoW, PoS, PoA, DPoS, LPoS, PoI, PoET, PoC, PoB, Round Robin)
- Public vs. Private / Permissionless vs. Permissioned Blockchains
- Coins, Tokens, Smart Contracts
- Basics of Crypto Hashing and Cryptography
- On-Chain, Off-Chain and Cross-Chain Activity
- Understanding Soft Forks and Hard Forks
- Common Blockchain Metrics

Module 2: Blockchain Technology & Architecture

- Common Blockchain Technology Mechanisms and Artifacts
- Node Monitor, Automated Node Deployer, Node Placement Monitor
- Consensus Processor, Block Maker, Identity Federator
- Hashing Engine, Chaining Engine, Identity Verifier, Wallet
- Node Repository, Ledger Replicator, Live Node Migrator
- Integrity and Validation Blockchain Design Patterns
- Block Singleton, Sidechain, Block Validation Consensus

- Scalability and Reliability Blockchain Design Patterns
- Auto-Scaling Nodes, Guaranteed Minimum Full Nodes
- Geo Scaling, Block Size Update
- Security and Privacy Blockchain Design Patterns
- Forced On-Chain Transactions, Federated Chain
- User Data Protection
- Utility Blockchain Design Patterns
- Transaction Record Tagging
- Lightweight Node, Node Task Abstraction

Module 3: Blockchain Technology & Architecture Lab

- Reading Exercise 3.1: AGT Research & Development Project Mini Case Study Background
- Lab Exercise 3.2: Permissioned Multi-Organization Blockchain Architecture
- Lab Exercise 3.3: Geographically Distributed Consensus Processing Architecture
- Lab Exercise 3.4: Mapping Business Goals to Blockchain Benefits
- Reading Exercise 3.5: REAN Association Mini Case Study Background
- Lab Exercise 3.6: Property Sale and Transfer Transaction Processing
- Lab Exercise 3.7: Mobile Device Support
- Lab Exercise 3.8: Consensus Processing Architecture
- Lab Exercise 3.9: Immutable Property Title Registry Log
- Lab Exercise 3.10: Blockchain-Enabled Real Estate Community Environment
- Lab Exercise 3.11: Business Goals to Blockchain Benefits Mapping
- Reading Exercise 3.12: Val2U Financial Mini Case Study Background
- Lab Exercise 3.13: Reliable Consensus Processing Architecture
- Lab Exercise 3.14: Off-Chain Funds Transfers
- Lab Exercise 3.15: Malicious User Countermeasures
- Lab Exercise 3.16: Business Goals to Blockchain Benefits Mapping
- Reading Exercise 3.17: MLHT-Tech Mini Case Study Background
- Lab Exercise 3.18: Decentralized Data Sharing
- Lab Exercise 3.19: Medical Center Business Data Filtering
- Lab Exercise 3.20: Patient Visit Record Codes
- Lab Exercise 3.21: Business Goals to Blockchain Benefits Mapping
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