Certified IoT Architect

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

COURSE MODULES & TOPICS

Module 1: Fundamental IoT

- Understanding Things, Connectivity, Data, Processing, Commands and Business Analytics
- IoT Business and Technology Drivers, Benefits and Challenges
- Miniaturization and Nanotechnology
- IoT Connectivity and Contextual Realtime Data
- IoT Business Domains (Personal, Home, Enterprise, Utilities, Mobile)
- IoT vs. the Internet
- Resource-Constrained Devices and Low-Power Wide-Area Networks (LPWANs)
- Active and Passive Devices (including RFID)
- Telemetry and Command Data
- Sensors (Mechanical, Resistive, Optical, Ranging, MEMS)
- Microcontrollers, Firmware and Power Sources
- IoT Gateways and Common Gateway Functions
- Introduction to Edge and Fog Computing
- IoT Platforms and Common Platform Functions
- IoT Architecture Layers and Action Modeling
- Key IoT Architecture Design Considerations
- Radio Transports (Leased vs. Unleased, High Band vs. Low Band)
- IoT Messaging with REST, HTTP and the Constrained Application Protocol (CoAp)
- REST Properties and Constrains with IoT and CoAp
- HTTP Resource Identifiers, Media Types and Method with IoT and CoAp
- IoT Publish-and-Subscribe and MQ Telemetry Transport (MQTT)
- Non-Binary Data Serialization for IoT with JSON
- Binary Data Serialization for IoT with Protocol Buffers

Module 2: IoT Technology & Architecture

- Components of an IoT Device (including sensor, actuator, modem, control logic, etc.)
- IoT Platforms, Gateways and Publish-Subscribe Systems
- Device Shadows and Device Shadow Registries
- Trusted Platform Module (TPM) and the Truncated Exponential Back-off Algorithm
- Fundamental Functional Distribution Patterns

© Koenig Solutions

- Autonomous Controlling Device Model, Intermediary Controlling Model
- Multi-Gateway Intermediary Controlling Model, Recipient Device Controlling Model
- Telemetry Processing Patterns
- Minimalized Data, Canonical Data Format
- Telemetry Modeling, Intermediary Metadata Provisioning
- Information Transduction and Encoding
- Performance Optimization Patterns
- Observe Messaging, Transport Quality Traffic Profile
- Reconnection Request Regulation, Device Workload Regulation
- Security, Reliability and Utility Patterns
- Radio Transport Encryption, Firmware Integrity Attestation
- Message Bookkeeping, Multimode Communication
- Network-Based Positioning and Triangulation

Module 3: IoT Technology & Architecture Lab

- Reading Exercise 3.1: Generic Asset Tracking (GAT) Case Study
- Lab Exercise 3.2: Building the IoT Tracking Architecture and Network
- Lab Exercise 3.3: Protecting Tracking Devices and Assets
- Reading Exercise 3.4: Alpha City Case Study
- Lab Exercise 3.5: Smart Parking System
- Lab Exercise 3.6: Wind Turbine Communication and Streetlight Control
- is authored by a dedicated courseware development team
- has a self-test, accreditation exam and professional certification
- is available via two different eLearning platforms
- undergo a common development process
- are authored to be consistent in quality, structure and style
- share a common vocabulary and symbol notation
- are authored in collaboration with subject matter experts
- About Arcitura
- Instructor-Led Training & Coaching
- eLearning with Arcitura
- Course & Certification Tracks
- Exams & Proctoring
- Digital Accreditations
- Trainer Development
- Partner Program
- Partner Portal
- Privacy Policy
- Candidate Agreement
- Logo Guidelines
- Contact
- Help
- Arcitura on LinkedIn