



## NEXT-GEN IT ACADEMY



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The Next-Gen IT Academy from Arcitura provides formal education and accreditation programs focused on contemporary technologies and fields of practice, including:

- / Digital Business Technology
- / Robotic Process Automation (RPA)
- / Cybersecurity
- / Containerization
- / Internet of Things (IoT)
- / Blockchain
- / DevOps
- / Quantum Computing

For more information, visit the Next-Gen IT Academy home page: [www.arcitura.com/nextgen](http://www.arcitura.com/nextgen)

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# SELF-STUDY



## ARCITURA **eLEARNING** OPTIONS

To give you the most flexibility to achieve your learning goals and accommodate your preferences, this course is made available via two Arcitura eLearning solutions: An interactive environment with graded exercises and a graded self-test, as well as a study kit account that supports online/offline access and custom annotations.



## ONLINE COACHING

Arcitura Certified Trainers are available to provide online coaching services that can be scheduled on an hourly basis. Scheduling is available in all time zones and is based on your preferences and trainer availability.



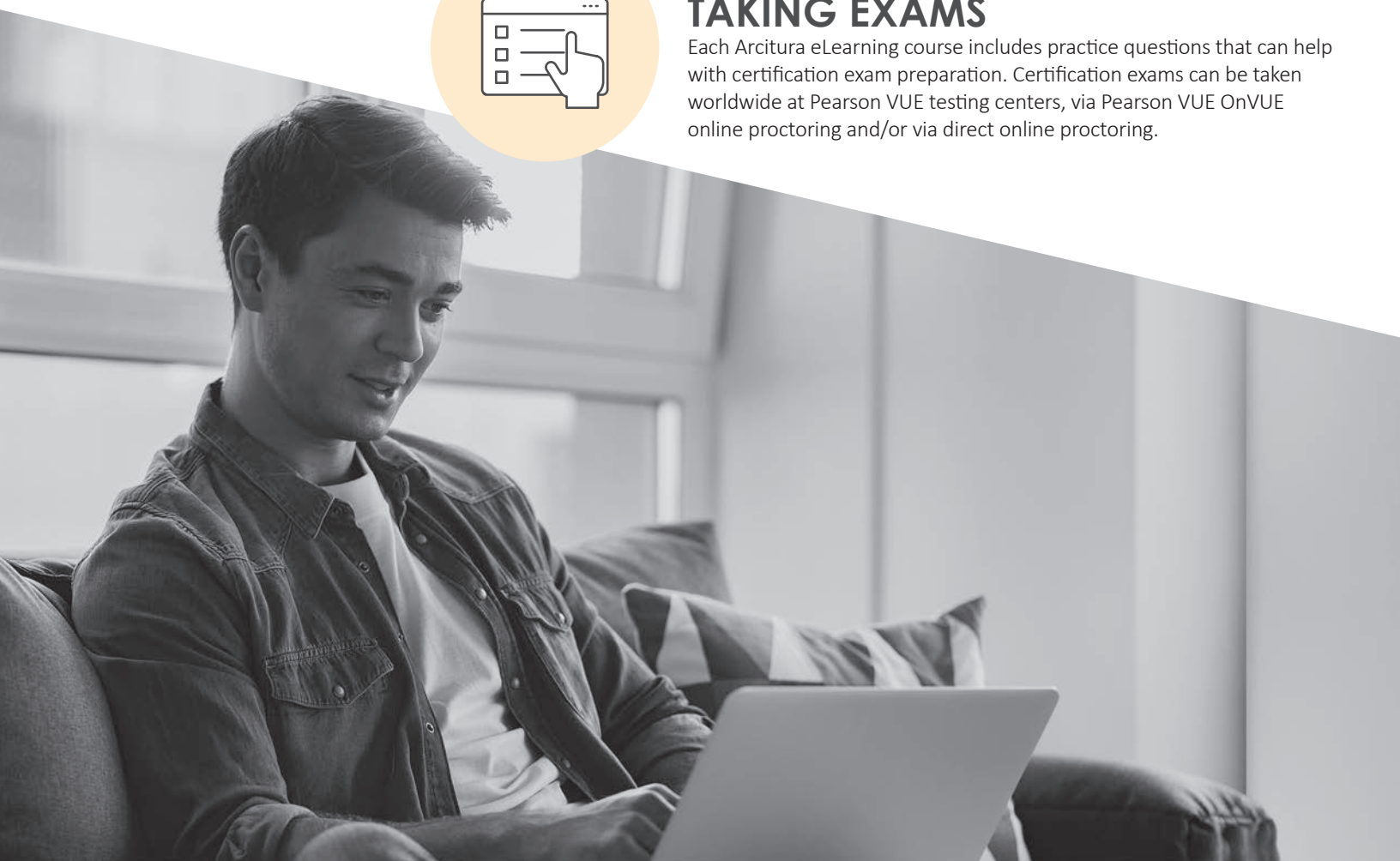
## ENHANCED SELF-STUDY WITH **ADD-ONS**

Arcitura eLearning courses can be supplemented with downloadable course files, printed course materials and other add-on resources.



## EXAM PREPARATION & **TAKING EXAMS**

Each Arcitura eLearning course includes practice questions that can help with certification exam preparation. Certification exams can be taken worldwide at Pearson VUE testing centers, via Pearson VUE OnVUE online proctoring and/or via direct online proctoring.





Onsite Classroom

Virtual Classroom

WORKSHOPS



## ONSITE WORKSHOPS

Private onsite workshops can be delivered by Certified Trainers from Arcitura and authorized training partners for both small and large groups. Each workshop participant can receive access to the full Arcitura eLearning course materials. Each workshop agenda, format and schedule can be tailored to client requirements. Onsite workshops allow for the option to deliver onsite paper-based exams.



## VIRTUAL WORKSHOPS

Private virtual workshops can be delivered by Certified Trainers from Arcitura and authorized training partners for small and large groups, as well as individual participants. Each workshop participant can receive access to the full Arcitura eLearning course materials. Each workshop agenda, virtual delivery platform and schedule can be tailored to client requirements. In addition to a typical delivery schedule based on consecutive workshop days, virtual workshops allow for a delivery schedule to be distributed as shorter sessions across weeks or months.



## ONLINE COACHING

Arcitura Certified Trainers are available to provide online coaching services that can be scheduled on an hourly basis. Scheduling is available in all time zones and is based on your preferences and trainer availability. For workshop participants, coaching sessions can be scheduled during or after a given workshop, for groups or individuals.



## EXAM PREPARATION & TAKING EXAMS

Onsite and virtual workshop participants can receive complimentary practice exam questions as part of their eLearning course accounts. Certified Trainers can supervise and provide guidance for participants completing the self-tests and the Exam Prep Kit practice questions provided in the eLearning accounts. Certification exams can be taken worldwide at Pearson VUE testing centers, via Pearson VUE OnVUE online proctoring and/or via direct online proctoring.





The Next-Gen IT Academy curriculum is comprised of 24 course modules and 8 certification tracks. For each topic area covered within the program, a set of 3 course modules is developed, along with a single exam. Exams are available worldwide via online proctoring and on-site delivery by Certified Trainers. Achieving a passing grade on the required exam(s) achieves a certification for which a digital accreditation certificate is automatically issued by Arcitura and a digital certification badge is issued by Acclaim/Credly.

[www.arcitura.com/nextgen](http://www.arcitura.com/nextgen)

#### QUESTIONS?

Contact us at: [info@arcitura.com](mailto:info@arcitura.com)





A Certified DevOps Specialist understands the DevOps process stages, techniques and models to successfully apply DevOps in support of achieving project objectives and realizing business goals.



A Certified Blockchain Architect understands the concepts, models and technology architecture behind Blockchain solutions for both public and private use, including the utilization of immutable data storage and consensus processing.



A Certified IoT Architect has knowledge of the devices, technologies, and protocols used to build IoT solutions, and has gained an understanding of different IoT architecture layers and models, as well as associated technology mechanisms.



A Certified Cybersecurity Specialist has an understanding of common cybersecurity threats, as well as the technologies and practices used to counter and prevent cyber-attacks, including the investigation of suspicious online activity and the hardening and protection of digital assets.



A Certified RPA Specialist has an understanding of RPA bots, design practices and business automation models and further has knowledge of how RPA solutions can incorporate artificial intelligence systems to establish intelligent automation environments.



A Certified Digital Business Technology Professional has an understanding of the purpose, benefits and challenges of contemporary digital business automation and data science technologies as they may relate to businesses pursuing their adoption.



A Certified Containerization Architect has an understanding of containerization technology architecture, as well as the inner workings of containers, including the utilization of container engines, templates and management solutions.



A Certified Quantum Computing Specialist has knowledge of concepts, architectural models and infrastructure components of quantum computing technology environments, as well as how they can be utilized to support business automation.





## DevOps

Develops skills in DevOps practices, processes, metrics and models.



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### MODULE 01 | Fundamental DevOps

A comprehensive overview of DevOps practices, models and techniques, along with coverage of DevOps benefits, challenges and business and technology drivers. Also explained is how DevOps compares to traditional solution development and release approaches and how the application of DevOps can be monitored and measured for concrete business value.



### MODULE 02 | DevOps in Practice

A course module that delves into the application of DevOps practices and models by exploring how the DevOps lifecycle and its associated stages can be carried out and further identifying related challenges and considerations. In-depth coverage is provided for the application of Continuous Integration (CI) and Continuous Delivery (CD) approaches, along with an exploration of creating deployment pipelines and managing data flow, solution versions and tracking solution dependencies.



### MODULE 03 | DevOps Lab

Provides a series of real-world exercises for applying DevOps practices and carrying out DevOps processes and related techniques to address requirements and solve problems.





## Blockchain Architecture

Develops skills in Blockchain functions, architectural models, technology and security.



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### MODULE 01 | Fundamental Blockchain

Provides a clear, end-to-end understanding of how Blockchain works. It breaks down Blockchain technology and architecture in easy-to-understand concepts, terms and building blocks. Industry drivers and impacts of Blockchain are explained, followed by plain English descriptions of each primary part of a Blockchain system and step-by-step descriptions of how these parts work together.



### MODULE 02 | Blockchain Technology & Architecture

Delves into Blockchain technology architecture and the inner workings of blockchains by exploring a series of key design patterns, techniques and related architectural models, along with common technology mechanisms used to customize and optimize Blockchain application designs in support of fulfilling business requirements.



### MODULE 03 | Blockchain Technology & Architecture Lab

Provides a series of exercises for applying and combining Blockchain technologies, mechanisms and security controls to solve real-world problems.



## IoT Architecture

Develops skills in Internet of Things (IoT) technology and architecture, along with proficiency in radio protocols, telemetry messaging and IoT architecture layers.



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### MODULE 01 | Fundamental IoT

Covers the essentials of the field of Internet of Things (IoT) from both business and technical aspects. Fundamental IoT use cases, concepts, models and technologies are covered in plain English, along with introductory coverage of IoT architecture and IoT messaging with REST, HTTP and CoAp.



### MODULE 02 | IoT Technology & Architecture

Provides a drill-down into key areas of IoT technology architecture and enabling technologies by breaking down IoT environments into individual building blocks via design patterns and associated implementation mechanisms. Layered architectural models are covered, along with design techniques and feature-sets covering the processing of telemetry data, positioning of control logic, performance optimization, as well as addressing scalability and reliability concerns.



### MODULE 03 | IoT Technology & Architecture Lab

Provides a series of exercises for applying and combining IoT concepts, technologies, architecture models and devices to solve real-world problems.

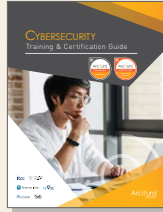


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## Cybersecurity

Develops an understanding of common cyber security threats and vulnerabilities and further develop skills in the technologies and practices used to prevent and counter cyber-attacks.



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### MODULE 01 | Fundamental Cybersecurity

Covers essential topics for understanding and applying cybersecurity solutions and practices. The module begins by covering basic aspects of cybersecurity and then explains foundational parts of cybersecurity environments, such as frameworks, metrics and the relationship between cybersecurity and data science technology.



### MODULE 02 | Advanced Cybersecurity

Delves into the building blocks of cybersecurity solution environments and further explores the range of cyber threats that cybersecurity solutions can be designed to protect organizations from. The module establishes a set of cybersecurity technology mechanisms that represent the common components that comprise cybersecurity solutions and further explores formal processes and procedures used to establish sound practices that utilize the mechanisms.



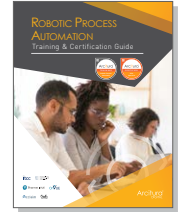
### MODULE 03 | Cybersecurity Lab

Provides a series of exercises for applying and combining Cybersecurity technologies and practices to solve real-world problems.



## Robotic Process Automation (RPA)

Develops skills in RPA technologies, practices and business process automation models.



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### MODULE 01 | Fundamental RPA

Establishes the components and models that comprise contemporary robotic process automation (RPA) environments. Different types of RPA bots are explained, along with different RPA architectures and bot utilization models. This course module further provides detailed scenarios that demonstrate different deployments of RPA bots and other components in relation to different business automation requirements.



### MODULE 02 | Advanced RPA & Intelligent Automation

Explores the relationship between RPA and AI and describes how these technologies can be combined to establish intelligence automation (IA) environments utilizing RPA bots and autonomous decision-making solutions using AI decisioning technology.



### MODULE 03 | RPA Lab

Provides a series of real-world exercises for applying and combining RPA models and practices to build RPA solutions for common usage scenarios.



## Digital Business Technology

Provides easy-to-understand, fundamental coverage of a broad range of contemporary IT technologies and associated IT practices. Coverage is intentionally non-technical and limited to explaining the strategic purpose and significance of each technology as it may relate to an organization's business operations. Topics include Digital Transformation Solutions, Artificial Intelligence (AI), Robotic Process Automation (RPA), Cloud Computing, Blockchain, Internet of Things (IoT), Machine Learning, Big Data and Cybersecurity.



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### MODULE 03 | Containerization Technology & Architecture Lab

Provides a series of exercises for applying and combining Containerization concepts, technologies, architecture models to solve real-world problems.



### MODULE 01 | Business Automation Technology Overview

Provides introductory, non-technical coverage of Cloud Computing, Robotic Process Automation (RPA) and the Internet of Things (IoT) with an emphasis on the drivers, benefits, goals, risks and challenges of these technologies.



### MODULE 02 | Data Science Technology Overview

Provides introductory, non-technical coverage of Big Data, Machine Learning and Artificial Intelligence (AI) with an emphasis on the drivers, benefits, goals, risks and challenges of these technologies.



### MODULE 03 | Digital & Security Technology Overview

Provides introductory, non-technical coverage of Digital Transformation, Blockchain and Cybersecurity with an emphasis on the drivers, benefits, goals, risks and challenges of these technologies.



## Containerization Architecture

Develops skills in containerization technology and architecture, along with proficiency in assessing, designing and securing highly available container-hosted services and solutions.



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### MODULE 03 | Quantum Computing Lab

Provides a series of real-world exercises for applying and combining technologies and models associated with assembling quantum computing solutions for common usage scenarios.



### MODULE 01 | Fundamental Containerization

Provides comprehensive coverage of Containerization models, technologies, mechanisms and environments. How the utilization of containers impacts both the technology and business of an organization is covered, along with many technical features, characteristics and deployment environments.



### MODULE 02 | Containerization Technology & Architecture

Provides a deep-dive into Containerization architectures, hosting models, deployment models and utilization by services and applications. Numerous advanced topics are covered, including high performance requirements, clustering, security and lifecycle management.



### MODULE 02 | Advanced Quantum Computing

Delves into additional quantum computing practices and infrastructure to establish insight into how quantum computing technology and practices can be applied in the real world and integrated with business automation solutions. Topics data teleportation, quantum error correction, linear ion trap, high Q optical cavity, nuclear magnetic resonance, quantum memory refresh units and parallelism.



### MODULE 03 | Quantum Computing Lab

Provides a series of real-world exercises for applying and combining technologies and models associated with assembling quantum computing solutions for common usage scenarios.



### MODULE 01 | Fundamental Quantum Computing

Covers basic concepts, terminology and models associated with quantum computing, as well as the common benefits, challenges and drivers of utilizing quantum computing in the real world. Topics include quantum physics, quantum states and information theory, as well as qubits, quantum gates, quantum storage and data paths.



### MODULE 02 | Advanced Quantum Computing

Delves into additional quantum computing practices and infrastructure to establish insight into how quantum computing technology and practices can be applied in the real world and integrated with business automation solutions. Topics data teleportation, quantum error correction, linear ion trap, high Q optical cavity, nuclear magnetic resonance, quantum memory refresh units and parallelism.



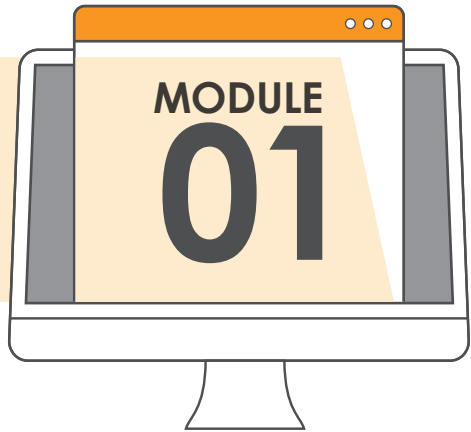
### MODULE 03 | Quantum Computing Lab

Provides a series of real-world exercises for applying and combining technologies and models associated with assembling quantum computing solutions for common usage scenarios.



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# Fundamental DevOps

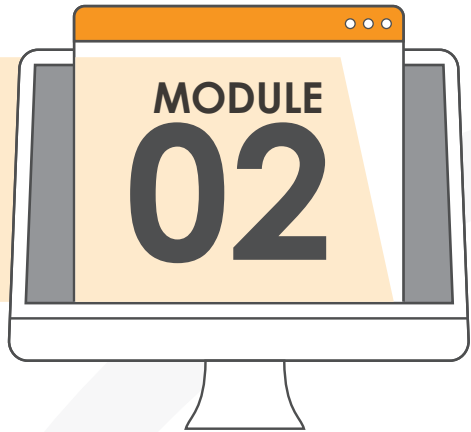


This course module provides a comprehensive overview of DevOps practices, models and techniques, along with coverage of DevOps benefits, challenges and business and technology drivers. Also explained is how DevOps compares to traditional solution development and release approaches and how the application of DevOps can be monitored and measured for concrete business value.

The following primary topics are covered:

- Business Drivers of DevOps
- IT Roles in DevOps Projects
- Goals and Benefits of DevOps Adoption
- Interoperability and Transparent Collaboration
- Rapid Delivery, Responsive Scalability and Increased Reliability
- Impacts and Challenges of DevOps Adoption
- Automation, Measurement and Unified Metrics
- DevOps Platform and Toolchain
- The 20 Common DevOps Tools, Repositories and Systems
- DevOps Lifecycle and Stages
- Delivery Pipeline, Feedback Loop and Dark Launching
- Continuous Integration (CI) and Continuous Delivery (CD)
- Automated Builds and Automated Testing
- Continuous Deployment and Automated Release Management
- Dependency Management, Infrastructure Resource Staging and Compliance Verification
- Introduction to IaC, PaC and CaC

# DevOps in Practice

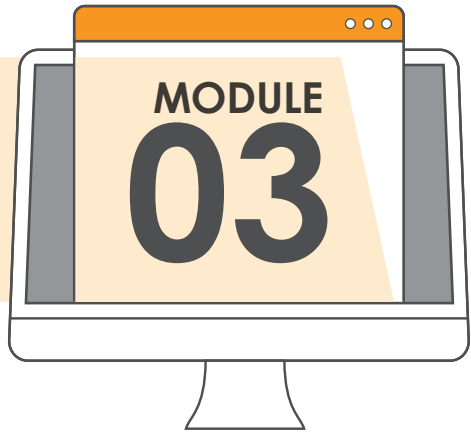


This course module delves into the application of DevOps practices and models by exploring how the DevOps lifecycle and its associated stages can be carried out and further identifying related challenges and considerations. In-depth coverage is provided for the application of Continuous Integration (CI) and Continuous Delivery (CD) approaches, along with an exploration of creating deployment pipelines and managing data flow, solution versions and tracking solution dependencies.

The following primary topics are covered:

- Understanding Codified Definitions
- Infrastructure-as-Code (IaC) and Configuration Modules
- Continuous Testing and Collaborative Version Control
- Immutable Infrastructure and Self-Documented Resources
- Configuration-as-Code (CaC) and Continuous Software Releases
- Traceable Configuration Changes and Configuration Status Awareness
- Programmatic Versioning and Automated Configuration Testing
- Policy-as-Code (PaC) and Policy Systems
- Automated Policy Application and Enforcement Testing
- The 17 Common DevOps Metrics
- Continuous Monitoring
- The 8 Common DevOps Monitors
- Measuring DevOps, Mapping Metrics to Monitors
- Mapping Metrics and Monitors to Pipeline Stages
- DevOps with Microservices and Containers
- DevOps with Cloud Computing and Pay-Per-Use Monitoring
- CI, CD, Continuous Deployment with Microservices and Cloud Computing
- IaC, CaC, PaC with Microservices and Cloud Computing

# DevOps Lab



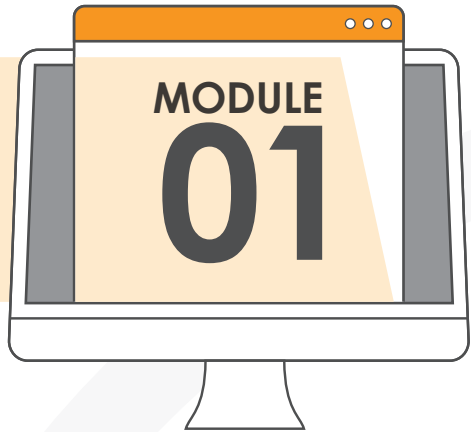
This course module presents participants with a series of exercises and problems that are designed to test their ability to apply their knowledge of topics covered in previous modules. Completing this lab will help highlight areas that require further attention and will further prove hands-on proficiency in DevOps models, practices and strategies, as they are combined and applied to solve real-world problems.

The following exercises are provided:

- Reading Exercise 3.1: CSD Mini Case Study Background
- Lab Exercise 3.2: Project Timeline Optimization
- Lab Exercise 3.3: Post-Deployment Challenges
- Lab Exercise 3.4: Responsiveness to Feedback
- Lab Exercise 3.5: Disparate Testing Tools and Practices
- Reading Exercise 3.6: AIC Mini Case Study Background
- Lab Exercise 3.7: Continuous Releases and Lead Time
- Lab Exercise 3.8: DevOps Practices and Automation
- Lab Exercise 3.9: Tools, Repositories and Systems
- Lab Exercise 3.10: Rapid Deployment and Codified Definitions



# Fundamental Blockchain

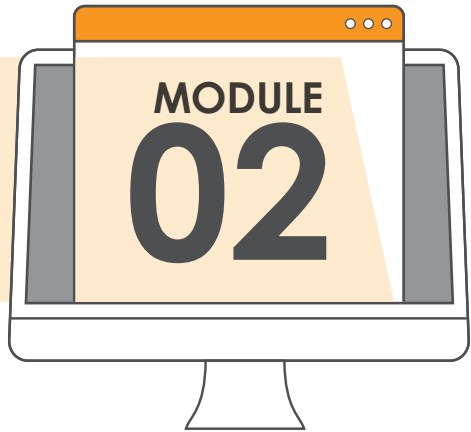


This course module provides a clear, end-to-end understanding of how blockchain works. It breaks down blockchain technology and architecture in easy-to-understand concepts, terms and building blocks. Industry drivers and impacts of blockchain are explained, followed by plain English descriptions of each primary part of a blockchain system and step-by-step descriptions of how these parts work together.

The following primary topics are covered:

- 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

# Blockchain Technology & Architecture

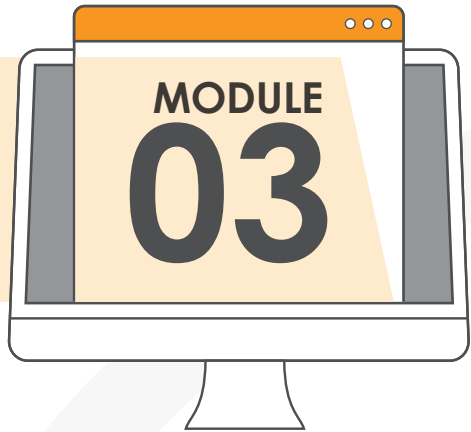


This course module delves into blockchain technology architecture and the inner workings of blockchains by exploring a series of key design patterns, techniques and related architectural models, along with common technology mechanisms used to customize and optimize blockchain application designs in support of fulfilling business requirements.

The following primary topics are covered:

- 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

# Blockchain Technology & Architecture Lab

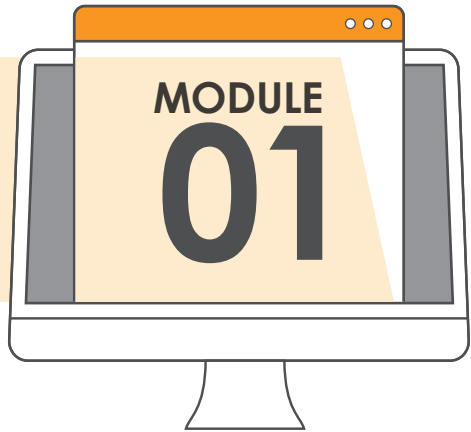


This course module presents participants with a series of exercises and problems that are designed to test their ability to apply their knowledge of topics covered in previous modules. Completing this lab will help highlight areas that require further attention and will further prove hands-on proficiency in blockchain technologies, mechanisms and security controls as they are applied and combined to solve real-world problems.

The following exercises are provided:

- 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

# Fundamental IoT

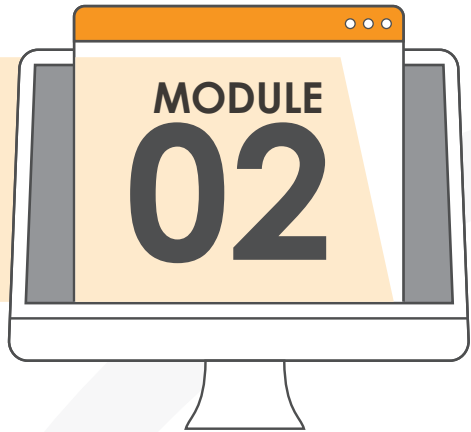


This course module covers the essentials of the field of Internet of Things (IoT) from both business and technical aspects. Fundamental IoT use cases, concepts, models and technologies are covered in plain English, along with introductory coverage of IoT architecture and IoT messaging with REST, HTTP and CoAp.

The following primary topics are covered:

- 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

# IoT Technology & Architecture

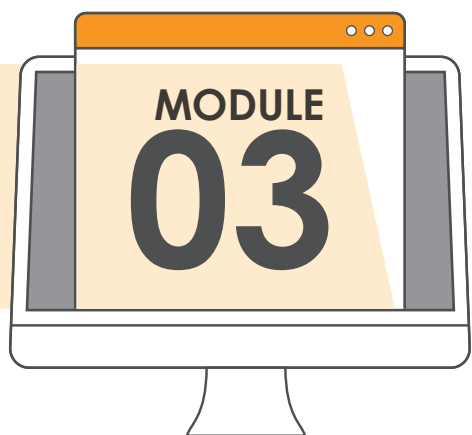


This course module provides a drill-down into key areas of IoT technology architecture and enabling technologies by breaking down IoT environments into individual building blocks via design patterns and associated implementation mechanisms. Layered architectural models are covered, along with design techniques and feature-sets covering the processing of telemetry data, positioning of control logic, performance optimization, as well as addressing scalability and reliability concerns.

The following primary topics are covered:

- 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
- 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

# IoT Technology & Architecture Lab



This course module presents participants with a series of exercises and problems that are designed to test their ability to apply their knowledge of topics covered in previous modules.

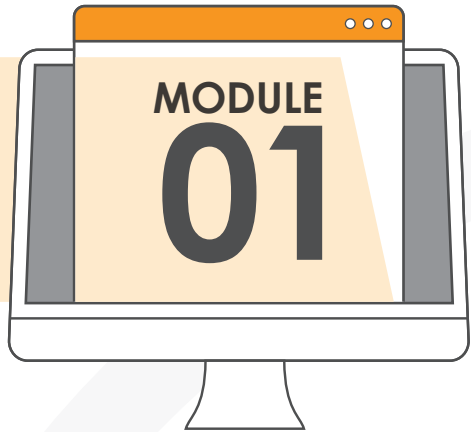
Completing this lab will help highlight areas that require further attention and will help prove hands-on proficiency in IoT concepts, technologies, architecture models and devices, as they are applied and combined to solve real-world problems.

The following exercises are provided:

- 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



# Fundamental Cybersecurity

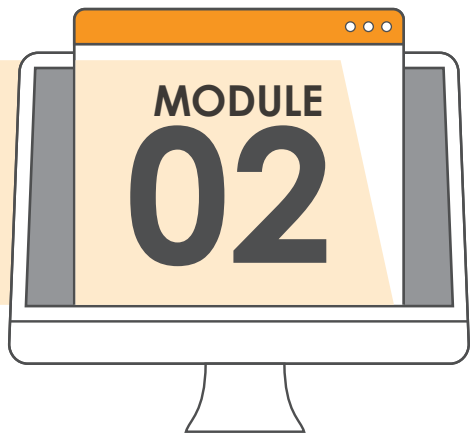


This course module covers essential topics for understanding and applying cybersecurity solutions and practices. The module begins by covering basic aspects of cybersecurity and then explains foundational parts of cybersecurity environments, such as frameworks, metrics and the relationship between cybersecurity and data science technology.

The following primary topics are covered:

- History of Asset Protection
- Cybersecurity Business and Technology Drivers
- Cybersecurity Goals and Benefits
- Risks and Challenges of Adopting Cybersecurity
- Cybersecurity Protection Characteristics and Functions
- Common Cyber Threat Terminology
- Cybersecurity Framework Components
- Digital Risk Assessment and Management
- Common Cybersecurity Industry Standards and Frameworks
- Cybersecurity and Machine Learning
- Cybersecurity and Artificial Intelligence
- Cybersecurity Resilience, Risk Assessment and Effectiveness Metrics

# Advanced Cybersecurity



This course module delves into the building blocks of cybersecurity solution environments and further explores the range of cyber threats that cybersecurity solutions can be designed to protect organizations from.

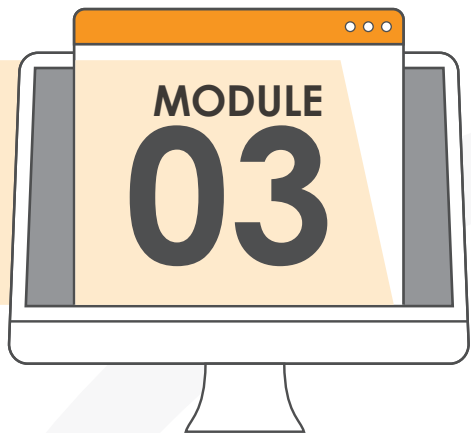
The module begins by establishing a set of cybersecurity technology mechanisms that represent the common components that comprise cybersecurity solutions. The module then explores a series of formal processes and procedures used to establish sound practices that utilize the mechanisms. The module concludes with comprehensive coverage of common cyber threats and attacks and further explains how each can be mitigated using the previously described mechanisms and processes.

The following primary topics are covered:

- 15 Cybersecurity Mechanisms (including Honeypots, , Biometric Scanners, Intrusion Detection, Malicious Code Analysis and User Behavior Analytics Systems)
- 9 Cybersecurity Monitoring Mechanisms (including Malware Monitors, Network Intrusion Monitors and Data Loss Protection Monitors)
- 13 Cybersecurity Processes (including Attack Surface Reduction, Continuous Vulnerability Management and Network Monitoring and Defense)
- Insider Threat Detection and Incident Response Management
- Cyber Threat Intelligence and Cyber Attack Motivations
- 13 Common Cyber Threats and Attacks (including Botnets, Tunneling and Remote Code Execution Attacks and 8 types of Malware)
- Insider Threats, Social Engineering and Phishing
- Advanced Persistent Threats (APTs)

The utilization of data science technologies (such as AI and Machine Learning) is further covered in relation to both how such technologies can be used to improve cybersecurity environments and how these technologies can be abused to carry out more sophisticated cyber attacks. Posters are further provided to show how mechanisms map to processes and how mechanisms and processes map to cyber threats and attacks.

# Cybersecurity Lab

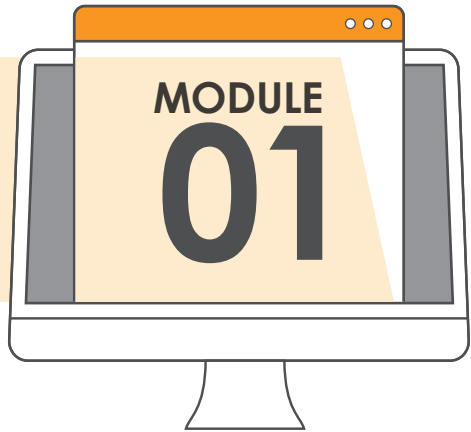


This course module presents participants with a series of exercises and problems that are designed to test their ability to apply their knowledge of topics covered in previous modules. Completing this lab will help highlight areas that require further attention and will help prove hands-on proficiency in Cybersecurity threats, practices and technologies, as they are utilized and combined to solve real-world problems.

The following exercises are provided:

- Reading Exercise 3.1: ENO Bank Background
- Lab Exercise 3.2: Data Breach
- Lab Exercise 3.3: Hidden Malware
- Optional Lab Exercise 3.4: Cybersecurity Processes
- Optional Lab Exercise 3.5: Cybersecurity Metrics
- Reading Exercise 3.6: ITI Background
- Lab Exercise 3.7: Ransomware
- Lab Exercise 3.8: Phishing
- Lab Exercise 3.9: Cybersecurity Processes
- Lab Exercise 3.10: Cybersecurity Metrics
- Reading Exercise 3.11: Auto-Mech Background
- Lab Exercise 3.12: Botnet and DoS
- Lab Exercise 3.13: Software Exploit and SQL Injection
- Optional Lab Exercise 3.14: Cybersecurity Processes
- Optional Lab Exercise 3.15: Cybersecurity Metrics
- Reading Exercise 3.16: Top Sector Financial (TSF) Background
- Lab Exercise 3.17: Malicious Insider

# Fundamental IoT

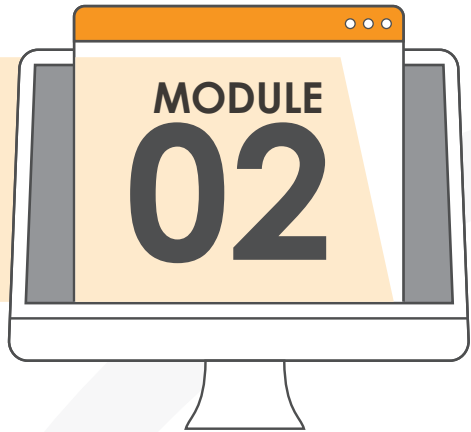


This course module covers the essentials of the field of Internet of Things (IoT) from both business and technical aspects. Fundamental IoT use cases, concepts, models and technologies are covered in plain English, along with introductory coverage of IoT architecture and IoT messaging with REST, HTTP and CoAp.

The following primary topics are covered:

- 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

# IoT Technology & Architecture

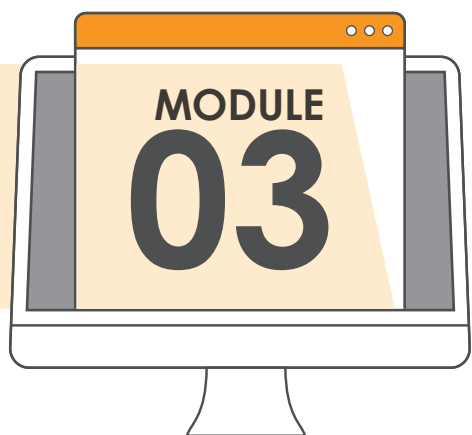


This course module provides a drill-down into key areas of IoT technology architecture and enabling technologies by breaking down IoT environments into individual building blocks via design patterns and associated implementation mechanisms. Layered architectural models are covered, along with design techniques and feature-sets covering the processing of telemetry data, positioning of control logic, performance optimization, as well as addressing scalability and reliability concerns.

The following primary topics are covered:

- 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
- 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

# IoT Technology & Architecture Lab



This course module presents participants with a series of exercises and problems that are designed to test their ability to apply their knowledge of topics covered in previous modules.

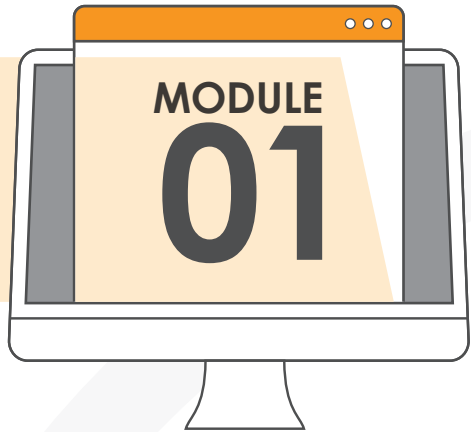
Completing this lab will help highlight areas that require further attention and will help prove hands-on proficiency in IoT concepts, technologies, architecture models and devices, as they are applied and combined to solve real-world problems.

The following exercises are provided:

- 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



# Fundamental RPA



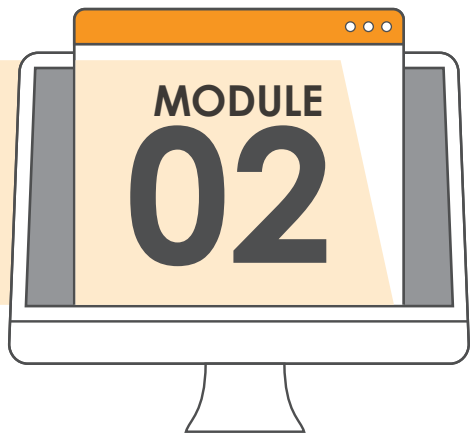
This course module establishes the components and models that comprise contemporary robotic process automation (RPA) environments. Different types of RPA bots are explained, along with different RPA architectures and bot utilization models. This module further provides detailed scenarios that demonstrate different deployments of RPA bots and other components in relation to different business automation requirements.

The following primary topics are covered:

- Understanding Robotic Process Automation
- RPA Business Drivers and Technology Drivers
- RPA Goals and Benefits
- RPA Risks and Challenges
- Front-end and Back-end Integration
- RPA Components and Bot Runners
- RPA Architecture Layers and Models
- RPA Life Cycle
- Front-End Integration with RPA Bots
- Back-End Integration with RPA Controllers and APIs
- Automated Data Entry
- Automated Routing
- Automated Web Searching
- Automated Data Search and Fetch
- Automated Digitization
- Automated User Acceptance Testing Usage Scenario

The usage scenarios covered in this module are further extended in Module 2 using Artificial Intelligence (AI) systems as part of intelligent automation solutions.

# Advanced RPA & Intelligent Automation

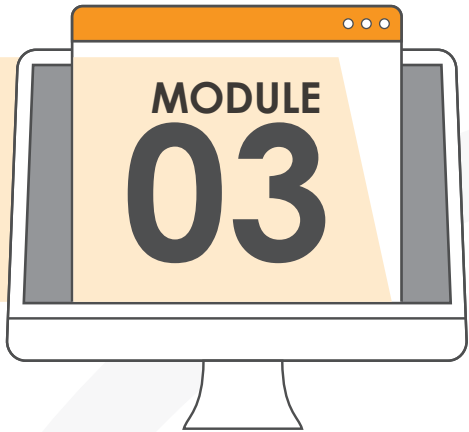


This course module explores the relationship between artificial intelligence (AI) and RPA and describes how these technologies can be combined to establish intelligence automation (IA) environments. The module covers different types of autonomous decision-making and further extends the usage scenarios from Module 1 by incorporating Artificial Intelligence (AI) systems as part of intelligent automation solutions.

The following primary topics are covered:

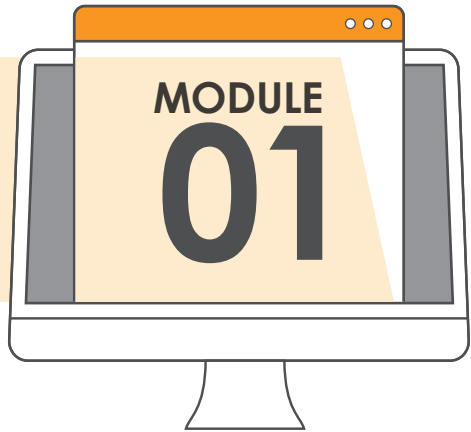
- Introduction to Intelligent Automation and Hyperautomation
- Intelligent Automation Business Drivers and Technology Drivers
- Intelligent Automation Goals and Benefits
- Intelligent Automation Risks and Challenges
- Components of Intelligent Automation Solutions
- Intelligent Automation and Business Process Management
- Introduction to Artificial Intelligence
- Understanding Autonomous Decision-Making
- Direct-Driven Automated Decision-Making
- Periodic Automated Decision-Making
- Realtime Automated Decision-Making
- Intelligent Automated Data Entry
- Intelligent Automated Routing
- Intelligent Automated Web Searching
- Intelligent Automated Data Search and Fetch
- Intelligent Automated Digitization
- Intelligent Automated User Acceptance Testing Usage Scenario

# RPA Lab



This course module presents participants with a series of exercises and problems that are designed to test their ability to apply their knowledge of topics covered in previous modules. Completing this lab will help highlight areas that require further attention and will further prove proficiency in RPA models and practices as they are applied and combined to common usage scenarios.

# Business Automation Technology Overview

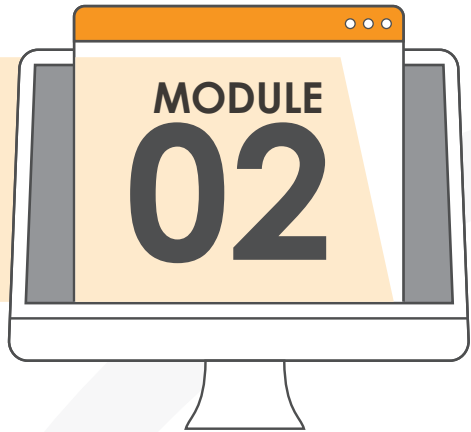


This course module provides introductory, non-technical coverage of Cloud Computing, Robotic Process Automation (RPA) and the Internet of Things (IoT). The module content is intentionally limited to understanding the drivers, benefits, goals, risks and challenges of these technologies. This module is intended for non-technical managers and IT professionals that only require a general understanding of the topics.

The following primary topics are covered:

- Introduction to Cloud Computing
- Business Drivers and Technology Drivers of Cloud Computing
- Goals and Benefits of Cloud Computing
- Risks and Challenges of Cloud Computing
- Introduction to Robotic Process Automation (RPA)
- Business Drivers and Technology Drivers of RPA
- Goals and Benefits of RPA
- Risks and Challenges of RPA
- Introduction to the Internet of Things (IoT)
- Business Drivers and Technology Drivers of IoT
- Goals and Benefits of IoT
- Risks and Challenges of IoT

# Data Science Technology Overview

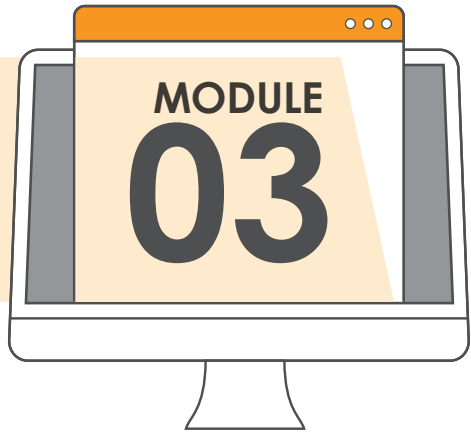


This course module provides introductory, non-technical coverage of Big Data, Machine Learning and Artificial Intelligence (AI). The module content is intentionally limited to understanding the drivers, benefits, goals, risks and challenges of these technologies. This module is indented for non-technical managers and IT professionals that only require a general understanding of the topics.

The following primary topics are covered:

- Introduction to Big Data
- Business Drivers and Technology Drivers of Big Data
- Goals and Benefits of Big Data
- Risks and Challenges of Big Data
- Introduction to Machine Learning
- Business Drivers and Technology Drivers of Machine Learning
- Goals and Benefits of Machine Learning
- Risks and Challenges of Machine Learning
- Introduction to Artificial Intelligence (AI)
- Business Drivers and Technology Drivers of AI
- Goals and Benefits of AI
- Risks and Challenges of AI

# Digital & Security Technology Overview

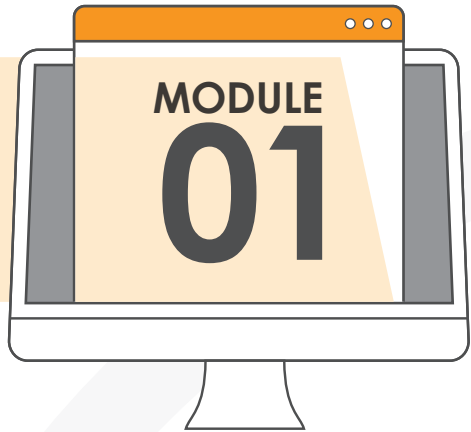


This course module provides introductory, non-technical coverage of Digital Transformation, Blockchain and Cybersecurity. The module content is intentionally limited to understanding the drivers, benefits, goals, risks and challenges of these technologies. This module is indented for non-technical managers and IT professionals that only require a general understanding of the topics.

The following exercises are provided:

- Introduction to Digital Transformation
- Business Drivers and Technology Drivers of Digital Transformation
- Goals and Benefits of Digital Transformation
- Risks and Challenges of Digital Transformation
- Introduction to Blockchain
- Business Drivers and Technology Drivers of Blockchain
- Goals and Benefits of Blockchain
- Risks and Challenges of Blockchain
- Introduction to Cybersecurity
- Business Drivers and Technology Drivers of Cybersecurity
- Goals and Benefits of Cybersecurity
- Risks and Challenges of Cybersecurity

# Fundamental Containerization

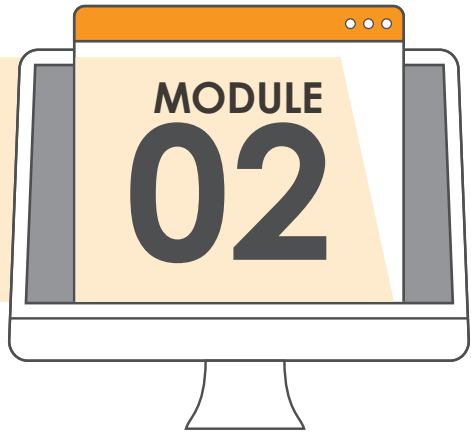


This course module explains the essential concepts and models that form the basis of containerization technology, and further explains how containers are created and implemented in the real world. How the utilization of containers impacts both the technology and business of an organization are covered, along with common technical features, characteristics and deployment environments. The module concludes with supplemental coverage of Docker and Kubernetes for reference purposes.

The following primary topics are covered:

- A Brief History of Containerization
- Operating System and Virtualization Basics
- Containers vs. Virtual Machines and Server Virtualization
- Technology and Business Drivers of Containerization
- Technical and Business Benefits, Risks and Challenges of using Containers
- Container Engines, Build Files and Images
- Pods, Hosts and Container Networks
- Fundamental Container Scalability and Availability
- Container Instances, Container Clusters and Host Clusters
- Base Container Images, Custom Container Images, and Image Immutability
- Image Registry, Package Repository and Packages
- Containerization Mechanisms
- Container Orchestrator, Deployment Optimizer, Container Scheduler
- Multi-Container Deployments
- Sidecar Container, Adapter Container, Ambassador Container
- Docker Server, Client, Registry, Objects, Swarm
- Kubernetes Pod, Kubelet, Kube-Proxy, Runtime, Cluster, Control Plane

# Containerization Technology & Architecture



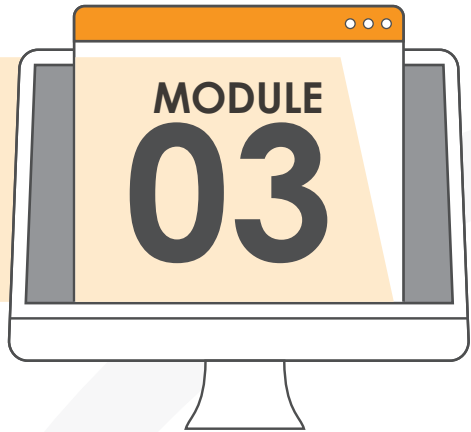
This course module provides a deep-dive into containerization models, practices and features through an exploration of technology architecture and patterns focused on container scalability, performance optimization, reliability, security and administration.

The following primary topics are covered:

- Container Image Integrity
- Container Runtime Immutability
- Container Chains
- Container Scheduling
- Volatile Container Configurations
- Container Initialization
- Container Program Observation and Monitoring
- Automated Pod Assignment
- Elastic Container Scaling
- Scaling Containers with Daemons
- Containers Duration Control
- Leader Node Election
- Single Host Multi-Containers
- Container Program Termination Control
- Container Failover and Resiliency
- Multi-Container Isolation Control
- Secure Container Connections
- Containers on Multiple Hosts



# Containerization Technology & Architecture Lab

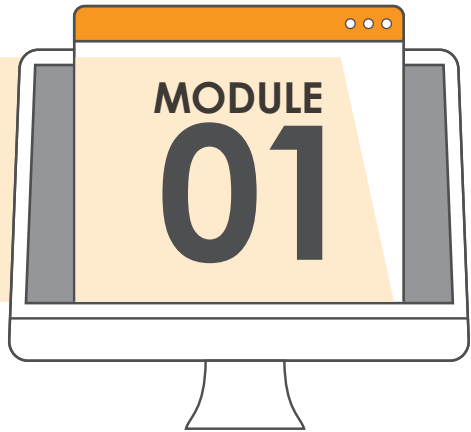


This course module presents participants with a series of exercises and problems that are designed to test their ability to apply their knowledge of topics covered in previous modules. Completing this lab will help highlight areas that require further attention and will help prove hands-on proficiency in containerization concepts, technologies, architecture models and pattern application, as they are utilized and combined to solve real-world problems.

The following exercises are provided:

- Lab Exercise 3.1: Solution Deployment and Optimization
- Lab Exercise 3.2: Solution Activation Prerequisites
- Lab Exercise 3.3: External Access and Concurrent Usage
- Lab Exercise 3.4: Solution Scalability and Coordination
- Lab Exercise 3.5: Solution Pre-Processing and Container Image Management
- Lab Exercise 3.6: Container Image and Deployment Management
- Lab Exercise 3.7: Container Deployment with Host Affinity
- Lab Exercise 3.8: Horizontal Container Scaling

# Fundamental Quantum Computing

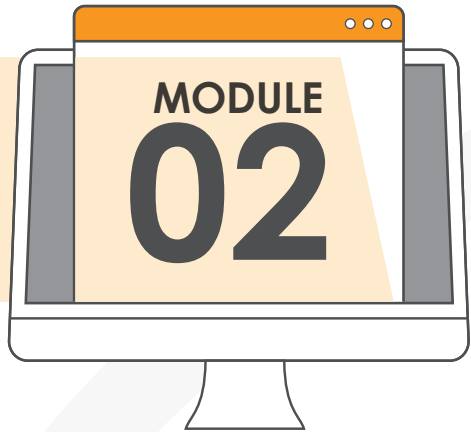


This course module explains quantum computing in plain English, with fundamental coverage of the benefits and challenges of working with quantum computers, as well as simplified coverage of the basic quantum mechanics concepts and principles that quantum computers are based upon. Also provided is an overview of individual quantum computer components and a step-by-step process description of how quantum computers carry out computations.

The following primary topics are covered:

- A Comparison of Quantum Computers and Classical Computers
- Quantum Computing Business and Technology Drivers
- Quantum Computing Benefits
- Common Risks and Challenges of Using Quantum Computing
- Business Problem Addressed by Quantum Computing
- Understanding Quantum Computing
- Fundamental Terms and Concepts
- Simplified Quantum Mechanics: Concepts and Principles
- Quantum Computer Components
- The Quantum Computing Process: Step-by-Step
- Common Quantum Computing Best Practices

# Advanced Quantum Computing

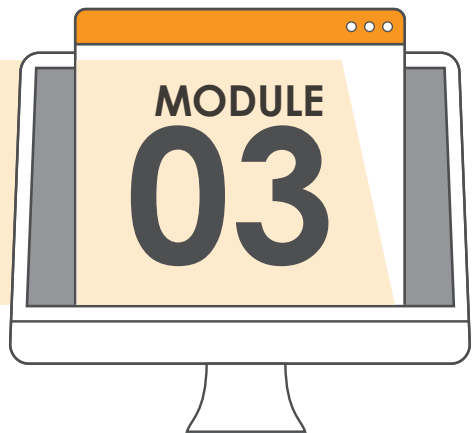


This course module expands upon some key quantum mechanics concepts and then covers a range of common techniques and quantum computational models to provide insight into the types of processing tasks quantum computers can carry out, as well as the runtime problems and environmental concerns that quantum computers commonly face. The course module does not cover any mathematical formulas or programming and is intended for general IT professionals.

The following primary topics are covered:

- More about Superposition, Entanglement & Quantum Gates
- Quantum Walks, Ancilla Qubits, Quantum Tunneling
- Quantum Entropy and Entropy Control
- Quantum Computing Techniques
- Fault-Tolerant Quantum Computation (FTQC)
- Post-Quantum Cryptography (PQC)
- Grover's Algorithm, Shor's Algorithm
- Quantum Computational Models, and Model Implementation Steps
- Fundamental Gate-Based Quantum Computing
- Quantum Annealing
- Quantum Adiabatic Optimization (QAO)
- Clustered State Computing
- Measurement-Based Quantum Computing (MBQC)

# Quantum Computing Lab



This course module provides a series of case-study driven, lab-style exercises and problems that are designed to test your ability to apply your knowledge of topics covered in previous modules. Completing this lab helps reinforce understanding of preceding topics and further demonstrates how different practices and technologies can be applied together as part of greater solutions.

The following exercises are provided:

- Reading Exercise 3.1 Case Study Background: FIN
- Lab Exercise 3.2: Inadequate Classical Computing Infrastructure
- Lab Exercise 3.3: New Computational Challenge and Decoherence Concerns
- Lab Exercise 3.4: Runtime Error Conditions
- Reading Exercise 3.5 Case Study Background: HQT
- Lab Exercise 3.6: Computational Optimization Deficiencies
- Lab Exercise 3.7: Gate-Based Computing Limitations
- Lab Exercise 3.8: Funding Cuts and Infrastructure Concerns
- Reading Exercise 3.9 Case Study Background: The Tax Office
- Lab Exercise 3.10: Cyber-Attack
- Lab Exercise 3.11: Data Vulnerability Testing

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## TRAINING AND EXAM PREPARATION RESOURCES

You can supplement this course with a number of available resources to assist with both learning and exam preparation. Contact [info@arcitura.com](mailto:info@arcitura.com) with any questions.



### *Certification Exam Prep Kit*

A set of additional practice questions is available to support exam preparation.



### *Digital Course Files*

For each course you can order a set of downloadable digital course materials comprised of printable, watermarked workbook and poster PDF files.



### *Printed Course Materials*

The printed workbooks and posters for each course can be ordered in B&W and full-color, and can be shipped worldwide.



### *One-on-One Coaching*

Certified Trainers are available to provide online coaching on an hourly basis and in all time zones.



### *Instructor-Led Training*

Certified Trainers are available to provide virtual and onsite training workshops for this and other Arcitura courses.

# EXAM PROCTORING



## TAKING EXAMS AT PEARSON VUE TESTING CENTERS

Pearson VUE offers testing centers worldwide that allow test takers to take proctored exams in-person. For more information, visit: [www.pearsonvue.com/arcitura](http://www.pearsonvue.com/arcitura)



## TAKING EXAMS VIA PEARSON VUE ONLINE PROCTORING

Pearson VUE OnVUE Online Proctoring enables test takers to take proctored exams remotely, in any time zone, and often on short notice. For more information, visit: [www.pearsonvue.com/arcitura/op](http://www.pearsonvue.com/arcitura/op)



## TAKING EXAMS VIA DIRECT ONLINE PROCTORING

Arcitura Direct Online Proctoring enables test takers to take proctored exams remotely, in any time zone, and often on short notice. For more information, contact [info@arcitura.com](mailto:info@arcitura.com) and provide your exam scheduling preferences.



## TAKING ON-SITE EXAMS DURING AN INSTRUCTOR-LED WORKSHOP

It is possible for Arcitura exams to be taken during the delivery of onsite workshops. In this case, the Certified Trainer teaching the workshop also acts as the exam proctor. Contact [info@arcitura.com](mailto:info@arcitura.com) for more information regarding this option.

You can take exams from anywhere in the world via Pearson VUE testing centers, Pearson VUE OnVUE online proctoring, direct online proctoring and/or onsite exam proctoring at your location. Visit [www.arcitura.com/exams](http://www.arcitura.com/exams) for details.



### AI Professional Academy

- Predictive AI Specialist Certification Exam
- Generative AI Specialist Certification Exam
- AI Engineer Certification Exam
- AI Architect Certification Exam
- AI Consultant Certification Exam
- AI Chatbot Specialist Certification Exam
- NLP Engineer Certification Exam
- Cloud AI Professional Certification Exam
- Cloud AI Architect Certification Exam

### Digital Transformation Professional Academy

- Digital Transformation Specialist Certification Exam
- Digital Transformation Technology Professional Certification Exam
- Digital Transformation Technology Architect Certification Exam
- Digital Transformation Data Science Professional Certification Exam
- Digital Transformation Data Scientist Certification Exam
- Digital Transformation Security Professional Certification Exam
- Digital Transformation Security Specialist Certification Exam
- Digital Transformation IA Professional Certification Exam
- Digital Transformation IA Specialist Certification Exam

### Next-Gen IT Academy

- DevOps Specialist Certification Exam
- Blockchain Architect Certification Exam
- IoT Architect Certification Exam
- Cybersecurity Specialist Certification Exam
- RPA Specialist Certification Exam
- Digital Business Technology Professional Certification Exam
- Containerization Architect Certification Exam
- Quantum Computing Specialist Certification Exam

### Next-Gen Data Science Academy

- Big Data Science Professional Certification Exam
- Big Data Scientist Certification Exam
- Machine Learning Specialist Certification Exam
- Artificial Intelligence Specialist Certification Exam
- Data Science Consultant Certification Exam
- Big Data Engineer Certification Exam
- Big Data Architect Certification Exam
- Data Science Governance Specialist Certification Exam
- AI Decisioning Specialist Certification Exam

### Cloud Computing School

- Cloud Technology Professional Certification Exam
- Cloud Computing Consultant Certification Exam
- Cloud Architect Certification Exam
- Cloud Security Specialist Certification Exam
- Cloud Governance Specialist Certification Exam
- Cloud Storage Specialist Certification Exam
- Cloud Virtualization Specialist Certification Exam

### Service Technology School

- Microservice Professional Certification Exam
- SOA Professional Certification Exam
- SOA Analyst Certification Exam
- SOA Architect Certification Exam
- Microservice Architect Certification Exam
- Service API Specialist Certification Exam
- Service Governance Specialist Certification Exam
- Service Security Specialist Certification Exam
- Microservice Consultant Certification Exam

COURSES		Predictive AI	Generative AI	AI Engineering	AI Architecture & Design	AI Professional Consulting	AI Chatbot Concepts & Design	NLP Engineering	Cloud AI Technology & Automation	Cloud AI Architecture & Design
CERTIFICATIONS		Predictive AI Specialist	Generative AI Specialist	AI Engineer	AI Architect	AI Consultant	AI Chatbot Specialist	NLP Engineer	Cloud AI Professional	Cloud AI Architect
MODULE 01	Fundamental Predictive AI	●		●	●	●				
MODULE 02	Advanced Predictive AI	●								
MODULE 03	Predictive AI Lab	●								
MODULE 04	Fundamental Generative AI		●	●	●	●				
MODULE 05	Advanced Generative AI		●							
MODULE 06	Generative AI Lab		●							
MODULE 07	Fundamental AI Engineering			●		●				
MODULE 08	Advanced AI Engineering			●						
MODULE 09	AI Engineering Lab			●						
MODULE 10	Fundamental AI Architecture				●	●				
MODULE 11	Advanced AI Architecture				●					
MODULE 12	AI Architecture Lab				●					
MODULE 13	Fundamental AI Chatbot Concepts & Design						●			
MODULE 14	Advanced AI Chatbot Concepts & Design						●			
MODULE 15	AI Chatbot Concepts & Design Lab						●			
MODULE 16	Fundamental NLP Engineering							●		
MODULE 17	Advanced NLP Engineering							●		
MODULE 18	NLP Engineering Lab							●		
MODULE 19	Fundamental Cloud AI Technology & Automation								●	●
MODULE 20	Advanced Cloud AI Technology & Automation								●	●
MODULE 21	Fundamental Cloud AI Architecture & Design									●
MODULE 22	Advanced Cloud AI Architecture & Design									●
MODULE 23	Cloud AI Architecture & Design Lab									●



COURSES		Digital Transformation	Fundamental Digital Technology	Digital Technology & Architecture	Fundamental AI & Data Science for Digital Transformation	AI & Data Science for Digital Transformation	Fundamental Security for Digital Transformation	Security for Digital Transformation	Fundamental Intelligent Automation for Digital Transformation	Intelligent Automation for Digital Transformation
CERTIFICATIONS		Digital Transformation Specialist	Digital Technology Professional	Digital Technology Architect	Digital Data Science Professional	Digital Data Scientist	Digital Security Professional	Digital Security Specialist	Intelligent Automation Professional	Intelligent Automation Specialist
MODULE 01	Fundamental Digital Transformation	●	●	●	●	●	●	●	●	●
MODULE 02	Digital Transformation in Practice	●	●	●	●	●	●	●	●	●
MODULE 03	Fundamental Cloud Computing		●	●						
MODULE 04	Fundamental Blockchain		●	●			●	●		
MODULE 05	Fundamental IoT		●	●						
MODULE 06	Cloud Architecture			●						
MODULE 07	Blockchain Architecture			●				●		
MODULE 08	IoT Architecture			●						
MODULE 09	Fundamental Big Data Analysis & Analytics				●	●				
MODULE 10	Fundamental Machine Learning				●	●				
MODULE 11	Fundamental AI				●	●			●	●
MODULE 12	Advanced Big Data Analysis & Analytics					●				
MODULE 13	Advanced Machine Learning					●				
MODULE 14	Advanced AI					●				●
MODULE 15	Fundamental Cybersecurity						●	●		
MODULE 16	Advanced Cybersecurity							●		
MODULE 17	Fundamental RPA								●	●
MODULE 18	Advanced RPA & Intelligent Automation									●

Attaining a certification that encompasses all of the course modules also associated with another certification results in the other certification also being automatically awarded.

COURSES		DevOps	Blockchain Architecture	IoT Architecture	Cybersecurity	Robotic Process Automation	Digital Business Technology	Containerization Architecture	Quantum Computing
CERTIFICATIONS		DevOps Specialist	Blockchain Architect	IoT Architect	Cybersecurity Specialist	RPA Specialist	Digital Business Technology Professional	Containerization Architect	Quantum Computing Specialist
DevOps	MODULE 01 Fundamental DevOps	●							
	MODULE 02 DevOps in Practice	●							
	MODULE 03 DevOps Lab	●							
Blockchain	MODULE 01 Fundamental Blockchain		●						
	MODULE 02 Blockchain Technology & Architecture		●						
	MODULE 03 Blockchain Technology & Architecture Lab		●						
Internet of Things	MODULE 01 Fundamental IoT			●					
	MODULE 02 IoT Technology & Architecture			●					
	MODULE 03 IoT Technology & Architecture Lab			●					
Cybersecurity	MODULE 01 Fundamental Cybersecurity				●				
	MODULE 02 Advanced Cybersecurity				●				
	MODULE 03 Cybersecurity Lab				●				
Robotic Process Automation	MODULE 01 Fundamental RPA					●			
	MODULE 02 Advanced RPA & Intelligent Automation					●			
	MODULE 03 RPA Lab					●			
Digital Business Technology	MODULE 01 Business Automation Technology Overview						●		
	MODULE 02 Data Science Technology Overview						●		
	MODULE 03 Digital & Security Technology Overview						●		
Containerization	MODULE 01 Fundamental Containerization							●	
	MODULE 02 Containerization Technology & Architecture							●	
	MODULE 03 Containerization Technology & Architecture Lab							●	
Quantum Computing	MODULE 01 Fundamental Quantum Computing								●
	MODULE 02 Advanced Quantum Computing								●
	MODULE 03 Quantum Computing Lab								●

COURSES		Big Data Analytics & Fundamental Data Science	Big Data Analysis & Advanced Data Science	Data Science Professional Consulting	Machine Learning	Artificial Intelligence	Big Data Engineering	Big Data Architecture	Data Science Governance	AI Decisioning
CERTIFICATIONS		Big Data Science Professional	Big Data Scientist	Data Science Consultant	Machine Learning Specialist	Artificial Intelligence Specialist	Big Data Engineer	Big Data Architect	Data Science Governance Specialist	AI Decisioning Specialist
MODULE 01	Fundamental Big Data Science & Analytics	•	•	•			•	•	•	•
MODULE 02	Big Data Analysis & Technology Concepts	•	•	•			•	•	•	•
MODULE 03	Big Data Analysis & Technology Lab	•		•						
MODULE 04	Big Data Analysis & Science		•							
MODULE 05	Advanced Big Data Analysis & Science		•							
MODULE 06	Big Data Analysis & Science Lab		•							
MODULE 07	Fundamental Machine Learning			•	•					
MODULE 08	Advanced Machine Learning				•					
MODULE 09	Machine Learning Lab				•					
MODULE 10	Fundamental Artificial Intelligence			•		•				
MODULE 11	Advanced Artificial Intelligence					•				
MODULE 12	Artificial Intelligence Lab					•				
MODULE 13	Fundamental Big Data Engineering						•			
MODULE 14	Advanced Big Data Engineering						•			
MODULE 15	Big Data Engineering Lab						•			
MODULE 16	Fundamental Big Data Architecture							•		
MODULE 17	Advanced Big Data Architecture							•		
MODULE 18	Big Data Architecture Lab							•		
MODULE 19	Fundamental Data Science Governance for Big Data, Machine Learning & AI								•	
MODULE 20	Advanced Data Science Governance for Big Data, Machine Learning & AI								•	
MODULE 21	Data Science Governance Lab for Big Data, Machine Learning & AI								•	
MODULE 22	Fundamental AI Decisioning									•
MODULE 23	Advanced AI Decisioning									•
MODULE 24	AI Decisioning Lab									•

COURSES		Cloud Computing	Cloud Computing Professional Consulting	Cloud Architecture	Cloud Security	Cloud Governance	Cloud Storage	Cloud Virtualization
CERTIFICATIONS		Cloud Technology Professional	Cloud Computing Consultant	Cloud Architect	Cloud Security Specialist	Cloud Governance Specialist	Cloud Storage Specialist	Cloud Virtualization Specialist
MODULE 01	Fundamental Cloud Computing	●	●	●	●	●	●	●
MODULE 02	Cloud Technology Concepts	●	●	●	●	●	●	●
MODULE 03	Cloud Technology Lab	●	●					
MODULE 04	Fundamental Cloud Architecture		●	●				
MODULE 05	Advanced Cloud Architecture			●				
MODULE 06	Cloud Architecture Lab			●				
MODULE 07	Fundamental Cloud Security		●		●			
MODULE 08	Advanced Cloud Security				●			
MODULE 09	Cloud Security Lab				●			
MODULE 10	Fundamental Cloud Governance					●		
MODULE 11	Advanced Cloud Governance					●		
MODULE 12	Cloud Governance Lab					●		
MODULE 13	Fundamental Cloud Storage						●	
MODULE 14	Advanced Cloud Storage						●	
MODULE 15	Cloud Storage Lab						●	
MODULE 16	Fundamental Cloud Virtualization							●
MODULE 17	Advanced Cloud Virtualization							●
MODULE 18	Cloud Virtualization Lab							●

COURSES		Fundamental Microservices & Service Technology	Fundamental SOA Design with Services & Microservices	SOA Analysis & Modeling with Services & Microservices	SOA Design & Architecture with Services & Microservices	Microservice Design & Architecture	Microservice Professional Consulting	Service API Design & Management	Service Governance & Project Delivery	Security for Microservices & SOA
CERTIFICATIONS		Microservice Professional	SOA Professional	SOA Analyst	SOA Architect	Microservice Architect	Microservice Consultant	Service API Specialist	Service Governance Specialist	Service Security Specialist
MODULE 01	Fundamental SOA, Services & Microservices	●	●	●	●	●	●	●	●	●
MODULE 02	Microservice Technology Concepts	●			●	●	●	●		●
MODULE 03	Design & Architecture with SOA, Services & Microservices		●	●	●				●	
MODULE 04	Fundamental SOA Analysis & Modeling with Services & Microservices			●						
MODULE 05	Advanced SOA Analysis & Modeling with Services & Microservices			●						
MODULE 06	SOA Analysis & Modeling Lab with Services & Microservices			●						
MODULE 07	Advanced SOA Design & Architecture with Services & Microservices				●					
MODULE 08	SOA Design & Architecture Lab with Services & Microservices				●					
MODULE 09	Fundamental Microservice Architecture & Containerization					●	●			
MODULE 10	Advanced Microservice Architecture & Containerization					●				
MODULE 11	Microservice Architecture & Containerization Lab					●				
MODULE 12	Fundamental Service API Design & Management						●	●		
MODULE 13	Advanced Service API Design & Management							●		
MODULE 14	Service API Design & Management Lab							●		
MODULE 15	Fundamental Service Governance & Project Delivery								●	
MODULE 16	Advanced Service Governance & Project Delivery								●	
MODULE 17	Service Governance & Project Delivery Lab								●	
MODULE 18	Fundamental Security for Services, Microservices & SOA						●			●
MODULE 19	Advanced Security for Services, Microservices & SOA									●
MODULE 20	Security Lab for Services, Microservices & SOA									●

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# CONTACT US

+1-604-904-4100  
info@arcitura.com  
www.arcitura.com

 [www.youtube.com/@arcitura](http://www.youtube.com/@arcitura)

 [www.linkedin.com/company/arcitura](http://www.linkedin.com/company/arcitura)





