

IoT ARCHITECT

Certification




Arcitura®
CERTIFIED
IoT Architect

 Pearson | VUE

OnVUE  Arcitura On-Site
EXAM PROCTORING

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The Next-Gen IT Academy from Arcitura is dedicated to providing an ever-growing variety of training courses and accreditations in contemporary technologies and fields of practice within the IT industry. Important and modern innovations that are redefining the IT landscape and that have reached a sufficient state of maturity are researched and documented into sets of courses that form the basis for formal certifications.

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TRAINING & CERTIFICATION

The IoT Architect track is comprised of three courses that develop skills in Internet of Things (IoT) technology and architecture, along with proficiency in radio protocols, telemetry messaging and IoT architecture layers. The final course module consists of a series of lab exercises that require participants to apply their knowledge of the preceding courses in order to fulfill project requirements and solve real world problems. Completion of these courses as part of a virtual or on-site workshop results in each participant receiving an official digital Certificate of Completion, as well as a digital Training Badge from Acclaim/Credly.

To achieve the IoT Architect Certification, Exam IOT90.01 must be completed with a passing grade. A Certified IoT Architect understands the business value behind the utilization of the Internet of Things, and has demonstrated proficiency in the design of IoT devices and solutions with scalable connectivity and based on a range of functional distribution models, including models based on edge computing. Those who achieve this certification receive an official digital Certificate of Excellence, as well as a digital Certification Badge from Acclaim/Credly with an account that supports the online verification of certification status.

For more information, visit: www.arcitura.com/iot.





EXAM IOT90.01

Exam IOT90.01 can be taken worldwide at Pearson VUE testing centers or via Pearson VUE online proctoring. To learn more about scheduling this exam, visit www.pearsonvue.com/arcitura. This exam can also be made available for on-site proctoring as part of eligible public or private workshops. To learn more, visit www.arcitura.com/onsite.

It is recommended that you prepare for Exam IOT90.01 by acquiring the IoT Architect Certification eLearning kit bundle or the printed IoT Architect Certification study kit bundle or by attending an instructor-led workshop that includes the IoT Modules 1, 2 and 3. The current public workshop calendar can be viewed at www.arcitura.com/workshops. To learn more about having a private workshop delivered at your location, visit www.arcitura.com/private.



Fundamental IoT

MODULE 01



This course 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

MORE INFO

For curriculum information, visit www.arcitura.com/nextgen.



CONTENTS

This course is available as part of an Arcitura Study Kit in full-color printed and eLearning formats. In addition to the base course materials used during training workshops, additional materials designed for self-study purposes are also included.

- Workbook (1 of 3)
- Exam Preparation Guide (1 of 3)
- IoT Networking Supplement
- Mind Map Poster
- IoT Business Domains Poster
- Symbol Legend Poster
- Flashcards
- Audio Tutor Recording



eLEARNING

The eLearning kit provides enhanced features for self-study, including custom annotations and commenting, outline-driven navigation, custom bookmarks, multi-document viewing and full-text searching. This environment also enables online and offline access without the need to install any software.



IoT Technology and Architecture

MODULE 02



This course 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

MORE INFO

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CONTENTS

This course is available as part of an Arcitura Study Kit in full-color printed and eLearning formats. In addition to the base course materials used during training workshops, additional materials designed for self-study purposes are also included.

- Workbook (2 of 3)
- Exam Preparation Guide (2 of 3)
- Mind Map Poster
- Common IoT Mechanism and Component Relationships Poster
- Patterns and Mechanisms Poster
- Flashcards
- Audio Tutor Recording



eLEARNING

The eLearning kit provides enhanced features for self-study, including custom annotations and commenting, outline-driven navigation, custom bookmarks, multi-document viewing and full-text searching. This environment also enables online and offline access without the need to install any software.



IoT Technology & Architecture Lab

MODULE 03



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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 courses. 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.

For instructor-led delivery of this lab course, the Certified Trainer works closely with participants to ensure that all exercises are carried out completely and accurately. Attendees can voluntarily have exercises reviewed and graded as part of the class completion. For individual completion of this course as part of a study kit, a number of supplements are provided to help participants carry out exercises with guidance.

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MORE INFO

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CONTENTS

This course is available as part of an Arcitura Study Kit in full-color printed and eLearning formats. In addition to the base course materials used during training workshops, additional materials designed for self-study purposes are also included.

- Workbook (3 of 3)
- Exam Preparation Guide (3 of 3)
- Mind Map Poster
- Lab Exercise 3.3 Poster
- Lab Exercise 3.4 Poster
- Lab Exercise 3.5 Poster
- Lab Exercise 3.6 Poster
- Flashcards
- Audio Tutor Recording



eLEARNING

The eLearning kit provides enhanced features for self-study, including custom annotations and commenting, outline-driven navigation, custom bookmarks, multi-document viewing and full-text searching. This environment also enables online and offline access without the need to install any software.



NEXT-GEN IT ACADEMY CERTIFICATIONS



		Certified DevOps Specialist	Certified Blockchain Architect	Certified Machine Learning Specialist	Certified Artificial Intelligence Specialist	Certified IoT Architect	Certified Containerization Architect
DEVOPS MODULE 01	Fundamental DevOps	●					
DEVOPS MODULE 02	DevOps in Practice	●					
DEVOPS MODULE 03	DevOps Lab	●					
BLOCKCHAIN MODULE 01	Fundamental Blockchain		●				
BLOCKCHAIN MODULE 02	Blockchain Technology & Architecture		●				
BLOCKCHAIN MODULE 03	Blockchain Technology & Architecture Lab		●				
MACHINE LEARNING MODULE 01	Fundamental Machine Learning			●			
MACHINE LEARNING MODULE 02	Advanced Machine Learning			●			
MACHINE LEARNING MODULE 03	Machine Learning Lab			●			
AI MODULE 01	Fundamental Artificial Intelligence				●		
AI MODULE 02	Advanced Artificial Intelligence				●		
AI MODULE 03	Artificial Intelligence Lab				●		
IoT MODULE 01	Fundamental IoT					●	
IoT MODULE 02	IoT Technology & Architecture					●	
IoT MODULE 03	IoT Technology & Architecture Lab					●	
CONTAINERIZATION MODULE 01	Fundamental Containerization						●
CONTAINERIZATION MODULE 02	Containerization Technology & Architecture						●
CONTAINERIZATION MODULE 03	Containerization Technology & Architecture Lab						●

////// To learn more, visit: www.arcitura.com/nextgen



	Certified Cloud Professional*	Certified Cloud Technology Professional	Certified Cloud Architect	Certified Cloud Security Specialist	Certified Cloud Governance Specialist	Certified Cloud Storage Specialist	Certified 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							●

*The Certified Cloud Professional designation is automatically issued when achieving any other CCP certification. It can also be achieved by receiving passing grades on Exams C90.01 + C90.02.

BIG DATA SCIENCE CERTIFIED PROFESSIONAL (BDSCP)

BIG DATA SCIENCE SCHOOL

Arcitura[®]
CERTIFIED
Big Data Professional

	Certified Big Data Professional*	Certified Big Data Science Professional	Certified Big Data Scientist	Certified Big Data Consultant	Certified Big Data Engineer	Certified Big Data Architect	Certified Big Data Governance Specialist
MODULE 01 Fundamental Big Data	●	●	●	●	●	●	●
MODULE 02 Big Data Analysis & Technology Concepts	●	●	●	●	●	●	●
MODULE 03 Big Data Analysis & Technology Lab		●		●			
MODULE 04 Fundamental Big Data Analysis & Science			●	●			
MODULE 05 Advanced Big Data Analysis & Science			●				
MODULE 06 Big Data Analysis & Science Lab			●				
MODULE 07 Fundamental Big Data Engineering				●	●		
MODULE 08 Advanced Big Data Engineering					●		
MODULE 09 Big Data Engineering Lab					●		
MODULE 10 Fundamental Big Data Architecture						●	
MODULE 11 Advanced Big Data Architecture						●	
MODULE 12 Big Data Architecture Lab						●	
MODULE 13 Fundamental Big Data Governance							●
MODULE 14 Advanced Big Data Governance							●
MODULE 15 Big Data Governance Lab							●

* The Certified Big Data Professional designation is automatically issued when achieving any other BDSCP certification. It can also be achieved by receiving passing grades on Exams B90.01 + B90.02.

////// To learn more,
visit: www.arcitura.com/bdscp

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		Certified SOA Professional*	Certified SOA Analyst	Certified SOA Architect	Certified Microservice Architect	Certified Service Tech Consultant	Certified Service API Specialist	Certified Service Governance Specialist	Certified Service Security Specialist
MODULE 01	Fundamental SOA, Services & Microservices	●	●	●	●	●	●	●	●
MODULE 02	Service Technology Concepts	○		●	●	●	●		●
MODULE 03	Design & Architecture w/ SOA, Services & Microservices	○	●	●				●	
MODULE 04	Fundamental SOA Analysis & Modeling w/ Services & Microservices		●						
MODULE 05	Advanced SOA Analysis & Modeling w/ Services & Microservices		●						
MODULE 06	SOA Analysis & Modeling Lab w/ Services & Microservices		●						
MODULE 07	Advanced SOA Design & Architecture w/ Services & Microservices			●					
MODULE 08	SOA Design & Architecture Lab w/ 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								●

*The Certified SOA Professional designation is automatically issued when achieving any other SOACP certification. It can also be achieved by receiving passing grades on Exams S90.01B + S90.02B or S90.01B + S90.03B.



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