

# ARTIFICIAL INTELLIGENCE

## Training & Certification Guide

---



Arcitura<sup>®</sup>  
DIGITAL

# About the Next-Gen Data Science Academy

The Next-Gen Data Science Academy from Arcitura provides formal education and accreditation programs dedicated to the fields of Artificial Intelligence, Machine Learning, Big Data and general Data Science, including analytics and analysis, architecture, engineering and governance.

The Next-Gen Data Science Academy curriculum is comprised of 24 course modules and 9 certification tracks. Exams are available worldwide via Pearson VUE testing centers, as well as via Pearson VUE OnVue 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.

## TABLE OF CONTENTS

03

How to Take This Course ///

04

How to Get Started ///

05

How to Get Certified ///

06

Course Module Outlines ///

10

Training and Exam Preparation Resources ///

11

Arcitura Certification Programs ///



## HOW TO TAKE THIS COURSE



### 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.

To learn more, visit: [www.arcitura.com/elearning](http://www.arcitura.com/elearning)

To enroll, visit: [digital.arcitura.com/courses](http://digital.arcitura.com/courses)



### 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 Digital eLearning course materials. Each workshop agenda, format and schedule can be tailored to client requirements.

To learn more, visit: [www.arcitura.com/workshops](http://www.arcitura.com/workshops)



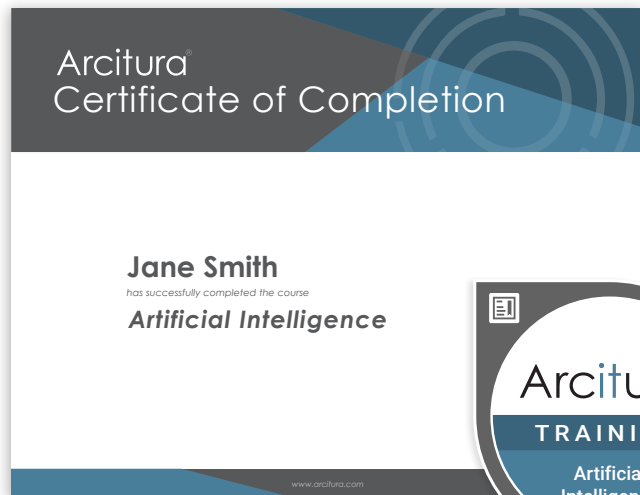
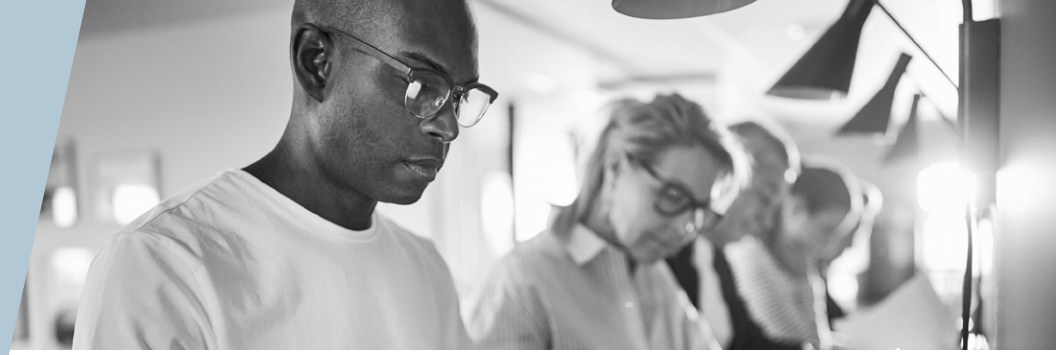
### VIRTUAL WORKSHOPS

Private virtual workshops can be delivered by Certified Trainers for small and large groups, as well as individual participants. Workshop participants receive access to the course materials via the Arcitura Digital eLearning platform. Virtual workshop agendas can be tailored with greater flexibility to accommodate more distributed and fragmented training schedules.

To learn more, visit: [www.arcitura.com/workshops](http://www.arcitura.com/workshops)



Several additional learning and exam preparation products and services are available, including coaching, exam prep kits and digital downloads. See the Training and Exam Preparation Resources page for details.



## HOW TO GET STARTED

Welcome to the Artificial Intelligence course! This course is comprised of a set of modules. Each module has a set of lessons and is further supplemented with exercises to help reinforce your understanding of key topics. Upon completing the course, you can optionally proceed to prepare yourself for the certification exam (as explained on the *How to get Certified* page).

Additional resources are available to assist you with completing this course, including downloadable digital course files, printed course materials, coaching hours and instructor-led training services (as explained on the *Training and Exam Preparation Resources* page.)

*A Certified Artificial Intelligence Specialist understands how AI practices can be utilized to perform data analysis and autonomous data processing and has knowledge of AI learning approaches and functional designs, as well as knowledge of neural networks.*



## HOW TO GET CERTIFIED

You can become a Certified Artificial Intelligence Specialist! This course can prepare you for the official Artificial Intelligence Specialist Certification exam, which can be taken worldwide at Pearson VUE testing centers, via Pearson VUE online proctoring and/or Arcitura direct proctoring.

Upon attaining a passing grade on the certification exam (and fulfilling any other prerequisite exam requirements) you will achieve the Artificial Intelligence Specialist Certification, after which you will automatically receive an official digital Accreditation Certificate and a digital Certification Badge from Acclaim/Credly with an account that supports the online verification of your certification status. Digital accreditation certificates and badges are free of charge.

Additional resources are available to assist you with preparing for the certification exam, including practice exam questions, downloadable digital course files, printed course materials, coaching hours and instructor-led training services (as explained on the *Training and Exam Preparation Resources* page.)

### MORE INFO

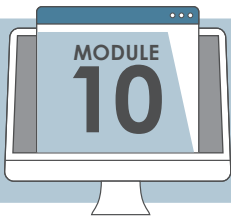
To learn more about this certification and exam, visit:  
[www.arcitura.com/certifications](http://www.arcitura.com/certifications)



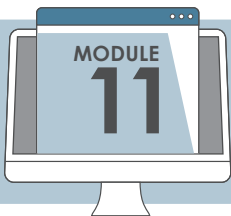
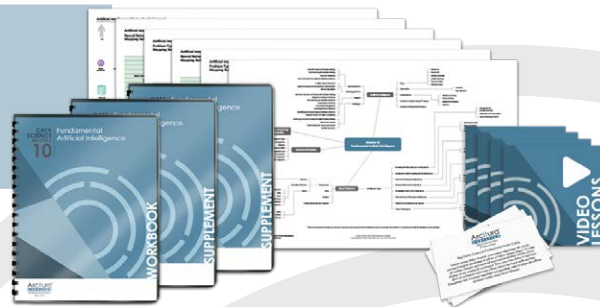


## COURSE MODULE OUTLINES

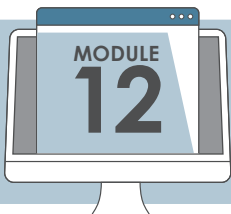
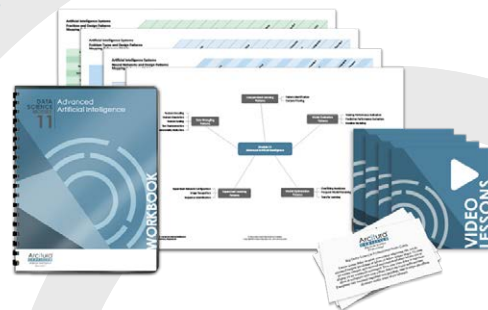
The Artificial Intelligence course is comprised of the following course modules. Outlines for these course modules are provided on the subsequent pages.



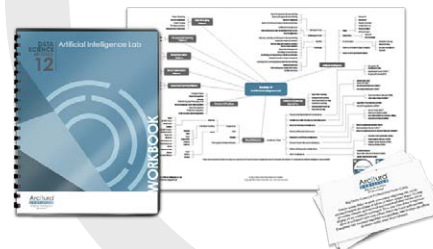
### Fundamental Artificial Intelligence



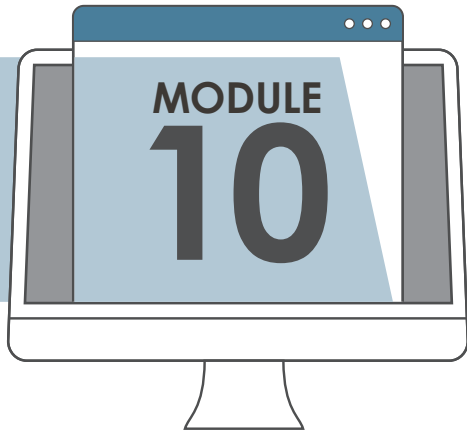
### Advanced Artificial Intelligence



### Artificial Intelligence Lab



# Fundamental Artificial Intelligence



//////

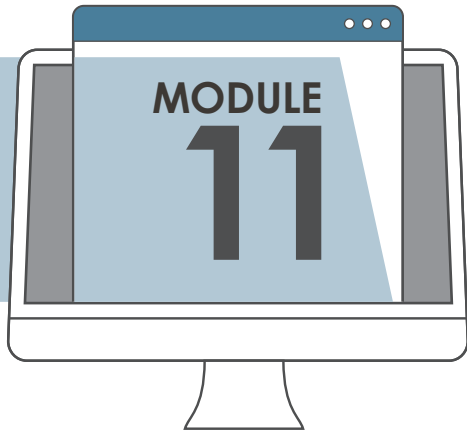
This course module provides essential coverage of artificial intelligence and neural networks in easy-to-understand, plain English. The module provides concrete coverage of the primary parts of AI, including learning approaches, functional areas that AI systems are used for and a thorough introduction to neural networks, how they exist, how they work and how they can be used to process information.

The course module establishes the five primary business requirements AI systems and neural networks are used for, and then maps individual practices, learning approaches, functionalities and neural network types to these business categories and to each other, so that there is a clear understanding of the purpose and role of each topic covered. The module further establishes a step-by-step process for assembling an AI system, thereby illustrating how and when different practices and components of AI systems with neural networks need to be defined and applied. Finally, the module provides a set of key principles and best practices for AI projects.

The following primary topics are covered:

- AI Business and Technology Drivers, AI Benefits and Challenges
- Business Problem Categories Addressed by AI, AI Types (Narrow, General, Symbolic, Non-Symbolic, etc.)
- Common AI Learning Approaches and Algorithms
- Supervised Learning, Unsupervised Learning, Continuous Learning
- Heuristic Learning, Semi-Supervised Learning, Reinforcement Learning
- Common AI Functional Designs, Computer Vision, Pattern Recognition
- Robotics, Natural Language Processing (NLP)
- Speech Recognition, Natural Language Understanding (NLU)
- Frictionless Integration, Fault Tolerance Model Integration
- Neural Networks, Neurons, Layers, Links, Weights
- Understanding AI Models and Training Models and Neural Networks
- Understanding how Models and Neural Networks Exist
- Loss, Hyperparameters, Learning Rate, Bias, Epoch
- Activation Functions (Sigmoid, Tanh, ReLU, Leaky ReLU, Softmax, Softplus)
- Neuron Cell Types (Input, Backfed, Noisy, Hidden, Probabilistic, Spiking, Recurrent, Memory, Kernel, Convolution, Pool, Output, Match Input, etc.)
- Fundamental and Specialized Neural Network Architectures
- Perceptron, Feedforward, Deep Feedforward, AutoEncoder, Recurrent, Long/Short Term Memory,
- Boltzmann Machine, Restricted Boltzmann Machine, Deep Belief Network
- Deep Convolutional Network, Extreme Learning Machine, Deep Residual Network
- Support Vector Machine, Kohonen Network, Hopfield Network
- Generative Adversarial Network, Liquid State Machine, How to Build an AI System (Step-by-Step)
- Common AI System Design Principles and Common AI Project Best Practices

# Advanced Artificial Intelligence



//////

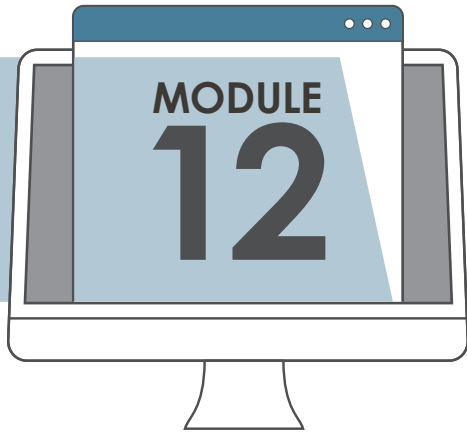
This course covers a series of practices for preparing and working with data for training and running contemporary AI systems and neural networks. It further provides techniques for designing and optimizing neural networks, including approaches for measuring and tuning neural network model performance. The practices and techniques are documented as design patterns that can be applied individually or in different combinations to address a range of common AI system problems and requirements. The patterns are further mapped to the learning approaches, functional areas and neural network types that were introduced in Module 10: Fundamental Artificial Intelligence.

The following primary topics are covered:

- Data Wrangling Patterns for Preparing Data for Neural Network Input
- Feature Encoding for Converting Categorical Features
- Feature Imputation for Inferring Feature Values
- Feature Scaling for Training Datasets with Broad Features
- Text Representation for Converting Data while Preserving Semantic and Syntactic Properties
- Dimensionality Reduction to Reduce Feature Space for Neural Network Input
- Supervised Learning Patterns for Training Neural Network Models
- Supervised Network Configuration for Establishing the Number of Neurons in Network Layers
- Image Identification for using a Convolutional Neural Network
- Sequence Identification for using a Long Short Term Memory Neural Network
- Unsupervised Learning Patterns for Training Neural Network Models
- Pattern Identification for Visually Identifying Patterns via a Self Organizing Map
- Content Filtering for Generating Recommendations
- Model Evaluation Patterns for Measuring Neural Network Performance
- Training Performance Evaluation for Assessing Neural Network Performance
- Prediction Performance Evaluation for Predicting Neural Network Performance in Production
- Baseline Modeling for Assessing and Comparing Complex Neural Networks
- Model Optimization Patterns for Refining and Adapting Neural Networks
- Overfitting Avoidance for Tuning a Neural Network
- Frequent Model Retraining for Keeping a Neural Network in Synch with Current Data
- Transfer Learning for Accelerating Neural Network Training



# Artificial Intelligence 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 further improve proficiency in AI systems, neural network architectures and related learning and functional practices and patterns, as they are applied and combined to solve a series of real-world problems.

The following exercises are provided:

- Reading Exercise 12.1: Case Study: Big Online Bazaar (BOB) Industries
- Lab Exercise 12.2: Preparing Model Training Data
- Lab Exercise 12.3: Refining the Model
- Lab Exercise 12.4: Model Performance Evaluation
- Reading Exercise 12.5: Case Study: Finance Link Connect (FLC) Services
- Lab Exercise 12.6: Configuring the Neural Network
- Lab Exercise 12.7: Improving Predictions with Missing Features
- Lab Exercise 12.8: Recognizing Images and Patterns for Fraud Protection
- Lab Exercise 12.9: Processing Numerical and Textual Input
- Reading Exercise 12.10: Case Study Background: SocialMeer Media Services
- Lab Exercise 12.11: Creating Categorized User Groups and Identifying Common Interests
- Lab Exercise 12.12: Establishing Active Buyers Categories
- Lab Exercise 12.13: Advanced User Targeting



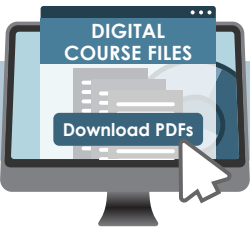
## TRAINING AND EXAM PREPARATION RESOURCES

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.

| COURSES        |   | Digital Transformation            | Digital Transformation: Fundamental Technology | Digital Transformation: Advanced Technology & Architecture | Digital Transformation: Fundamental Data Science | Digital Transformation: Advanced Data Science | Digital Transformation: Fundamental Security | Digital Transformation: Advanced Security  | Digital Transformation: Fundamental Intelligent Automation | Digital Transformation: Advanced Intelligent Automation  |
|----------------|---|-----------------------------------|--|--|--|---|--|--|--|--|
| CERTIFICATIONS |   | Digital Transformation Specialist | Digital Transformation Technology Professional | Digital Transformation Technology Architect                | Digital Transformation Data Science Professional | Digital Transformation Data Scientist         | Digital Transformation Security Professional | Digital Transformation Security Specialist | Digital Transformation Intelligent Automation Professional | Digital Transformation 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     |                                   |  |  |  |   |  |  |  | ●  |
| MODULE 19      | Fundamental AI Decisioning                |                                   |  |  |  |   |  |  | ●  | ●  |
| MODULE 20      | Advanced AI Decisioning                   |                                   |  |  |  |   |  |  |  | ●  |

Gray circles indicate prerequisite modules.

| 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  |   |   |                                      |                             |                                    |                      |                       |                                    | ●                         |

Gray circles indicate prerequisite modules.



| 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         |                               |   |                    |                           |                             |                          | ●                               |

Gray circles indicate prerequisite modules.

| COURSES        |   | Fundamental<br>Microservices &<br>Service<br>Technology | Fundamental<br>SOA Design<br>with<br>Services &<br>Microservices | SOA Analysis &<br>Modeling<br>with<br>Services &<br>Microservices | SOA Design &<br>Architecture<br>with<br>Services &<br>Microservices | Microservice<br>Design &<br>Architecture | Microservice<br>Professional<br>Consulting | Service API<br>Design &<br>Management | Service<br>Governance<br>& Project<br>Delivery | Security for<br>Microservices<br>& SOA |
|----------------|---|---|--|---|---|--|--|---------------------------------------|--|--|
| CERTIFICATIONS |   | Microservice<br>Professional                            | SOA<br>Professional  | SOA<br>Analyst  | SOA<br>Architect  | Microservice<br>Architect                | Microservice<br>Consultant                 | Service<br>API<br>Specialist          | Service<br>Governance<br>Specialist            | Service<br>Security<br>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                    |   |  |   |   |  |  |                                       |  | ●                                      |

Gray circles indicate prerequisite modules.



Arcitura®

Copyright © Arcitura Education Inc.  
[www.arcitura.com](http://www.arcitura.com) • [info@arcitura.com](mailto:info@arcitura.com)