

uCertify

Course Outline

CompTIA DataX (DY0-001)



04 Aug 2025

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2. Exercises, Quizzes, Flashcards & Glossary
 - Number of Questions
3. Expert Instructor-Led Training
4. ADA Compliant & JAWS Compatible Platform
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 - Chapter 3: Mathematics and Statistical Methods
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 - Chapter 5: Data Exploration and Analysis
 - Chapter 6: Data Processing and Preparation
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- Videos and How To
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Here's what you get

1. Pre-Assessment

Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

2. Exercises

There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.



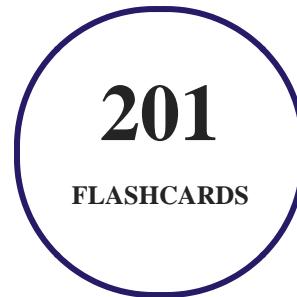
3. Quiz

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.



4. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



5. **Glossary of terms**

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.



6. **Expert Instructor-Led Training**

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

7. **ADA Compliant & JAWS Compatible Platform**

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

8. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

9. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**

1. Best Postsecondary Learning Solution

- **2015**

1. Best Education Solution

2. Best Virtual Learning Solution
3. Best Student Assessment Solution
4. Best Postsecondary Learning Solution
5. Best Career and Workforce Readiness Solution
6. Best Instructional Solution in Other Curriculum Areas
7. Best Corporate Learning/Workforce Development Solution

- **2016**

1. Best Virtual Learning Solution
2. Best Education Cloud-based Solution
3. Best College and Career Readiness Solution
4. Best Corporate / Workforce Learning Solution
5. Best Postsecondary Learning Content Solution
6. Best Postsecondary LMS or Learning Platform
7. Best Learning Relationship Management Solution

- **2017**

1. Best Overall Education Solution
2. Best Student Assessment Solution
3. Best Corporate/Workforce Learning Solution
4. Best Higher Education LMS or Learning Platform

- **2018**

1. Best Higher Education LMS or Learning Platform
2. Best Instructional Solution in Other Curriculum Areas
3. Best Learning Relationship Management Solution

- **2019**

1. Best Virtual Learning Solution
2. Best Content Authoring Development or Curation Solution
3. Best Higher Education Learning Management Solution (LMS)

- **2020**

1. Best College and Career Readiness Solution
2. Best Cross-Curricular Solution
3. Best Virtual Learning Solution

10. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

Syllabus

Chapter 1: Introduction

- About the DataX Certification
- How This Course Is Organized

Chapter 2: What Is Data Science?

- Data Science
- Data Science Best Practices
- Summary
- Exam Essentials

Chapter 3: Mathematics and Statistical Methods

- Calculus
- Probability Distributions
- Inferential Statistics
- Linear Algebra
- Summary
- Exam Essentials

Chapter 4: Data Collection and Storage

- Common Data Sources
- Data Ingestion
- Data Storage
- Managing the Data Lifecycle
- Summary
- Exam Essentials

Chapter 5: Data Exploration and Analysis

- Exploratory Data Analysis

- Common Data Quality Issues
- Summary
- Exam Essentials

Chapter 6: Data Processing and Preparation

- Data Transformation
- Data Enrichment and Augmentation
- Data Cleaning
- Handling Class Imbalance
- Summary
- Exam Essentials

Chapter 7: Modeling and Evaluation

- Types of Models
- Model Design Concepts
- Model Evaluation
- Summary
- Exam Essentials

Chapter 8: Model Validation and Deployment

- Model Validation
- Communicating Results
- Model Deployment
- Machine Learning Operations (MLOps)
- Summary
- Exam Essentials

Chapter 9: Unsupervised Machine Learning

- Association Rules
- Clustering
- Dimensionality Reduction
- Recommender Systems
- Summary
- Exam Essentials

Chapter 10: Supervised Machine Learning

- Linear Regression

- Logistic Regression
- Discriminant Analysis
- Naive Bayes
- Decision Trees
- Ensemble Methods
- Summary
- Exam Essentials

Chapter 11: Neural Networks and Deep Learning

- Artificial Neural Networks
- Deep Neural Networks
- Summary
- Exam Essentials

Chapter 12: Natural Language Processing

- Natural Language Processing
- Text Preparation
- Text Representation
- Summary

- Exam Essentials

Chapter 13: Specialized Applications of Data Science

- Optimization
- Computer Vision
- Summary
- Exam Essentials

11. Practice Test

Here's what you get

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PRE-ASSESSMENTS QUESTIONS

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FULL LENGTH TESTS

Features

Each question comes with detailed remediation explaining not only why an answer option is correct but also why it is incorrect.

Unlimited Practice

Each test can be taken unlimited number of times until the learner feels they are prepared. Learner can review the test and read detailed remediation. Detailed test history is also available.

Each test set comes with learn, test and review modes. In learn mode, learners will attempt a question and will get immediate feedback and complete remediation as they move on to the next question. In test mode, learners can take a timed test simulating the actual exam conditions. In review mode, learners can read through one item at a time without attempting it.

12. Live Labs

The benefits of live-labs are:

- Exam based practical tasks
- Real equipment, absolutely no simulations
- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

Lab Tasks

Mathematics and Statistical Methods

- Calculating Probabilities Using a PDF
- Calculating Skewness and Kurtosis in Data
- Exploring Discrete Probability Distributions
- Simulating the CLT
- Performing a Chi-Squared Test of Independence
- Performing a Two-Way ANOVA
- Performing a t-test for Two Samples
- Working With Matrices

Data Collection and Storage

- Generating Synthetic Data

Data Exploration and Analysis

- Creating a Bar Chart and a Scatterplot
- Creating a Box and Whisker Plot
- Creating a Sankey Diagram

Data Processing and Preparation

- Transforming the Data
- Flattening Hierarchical Data in Python
- Dealing with Missing Values
- Performing Oversampling and Undersampling

Modeling and Evaluation

- Performing Survival Analysis Using the Kaplan-Meier Estimator
- Creating a Time-Series Model to Predict Future Values
- Performing the Holdout Method for Model Training and Evaluation
- Evaluating Model Performance Using K-Fold Cross-Validation
- Evaluating Model Performance Using Bootstrapping
- Evaluating a Regression Model
- Evaluating a Classifier Model
- Plotting the ROC Curve

Model Validation and Deployment

- Selecting the Optimal Model

Unsupervised Machine Learning

- Performing K-Means Clustering

Supervised Machine Learning

- Using Linear Regression for Cost Prediction
- Using Logistic Regression for Patient Classification
- Classifying Species Using Decision Trees

Neural Networks and Deep Learning

- Creating an ANN Model
- Using CNN for Image Classification

Natural Language Processing

- Using NLP for Analyzing Tweets

Specialized Applications of Data Science

- Optimizing an ML Model
- Implementing Computer Vision Techniques

Here's what you get

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LIVE LABS

You can't stay away! Get



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