

# uCertify

## Course Outline

### D205 - Data Acquisition



20 May 2024

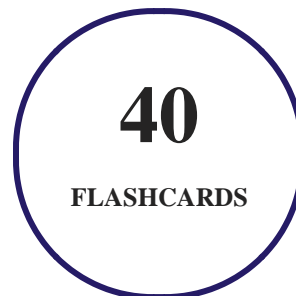
1. Pre-Assessment
2. Exercises, Quizzes, Flashcards & Glossary  
Number of Questions
3. Expert Instructor-Led Training
4. ADA Compliant & JAWS Compatible Platform
5. State of the Art Educator Tools
6. Award Winning Learning Platform (LMS)
7. Chapter & Lessons  
Syllabus  
Chapter 1: Welcome to Data Acquisition  
Chapter 2: Understanding and Describing Data  
Chapter 3: The Basics of SQL for Analytics  
Chapter 4: SQL for Data Preparation  
Chapter 5: Aggregate Functions for Data Analysis  
Chapter 6: Window Functions for Data Analysis  
Chapter 7: Importing and Exporting Data  
Chapter 8: Analytics Using Complex Data Types (SKIP)  
Chapter 9: Performant SQL (SKIP)  
Chapter 10: Using SQL to Uncover the Truth – a Case Study (SKIP)  
Videos and How To
8. Practice Test  
Here's what you get  
Features
9. Live labs  
Lab Tasks  
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. 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.



## 3. 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.



## 4. 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.

## 5. **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.

## 6. **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.

## 7. **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

## 8. 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: Welcome to Data Acquisition

- About this Course
- About the Labs in this Course
- Learning Resources

### Chapter 2: Understanding and Describing Data

- Introduction
- The World of Data
- Methods of Descriptive Statistics
- Statistical Significance Testing
- Videos
- Summary

### Chapter 3: The Basics of SQL for Analytics

- Introduction
- Relational Databases and SQL
- Basic Data Types of SQL
- Reading Tables: The SELECT Query
- Creating Tables
- Updating Tables
- Deleting Data and Tables
- SQL and Analytics
- Videos
- Summary

## Chapter 4: SQL for Data Preparation

- Introduction
- Assembling Data
- Transforming Data
- Videos
- Summary

## Chapter 5: Aggregate Functions for Data Analysis

- Introduction
- Aggregate Functions
- Aggregate Functions with GROUP BY
- The HAVING Clause
- Using Aggregates to Clean Data and Examine Data Quality
- Summary

## Chapter 6: Window Functions for Data Analysis

- Introduction
- Window Functions



- Statistics with Window Functions
- Videos
- Summary

## Chapter 7: Importing and Exporting Data

- Introduction
- The COPY Command
- Using R with Our Database (SKIP; You will cover R in the next course, D206.)
- Using Python with Our Database (SKIP; You will cover Python in the next course, D206.)
- Best Practices for Importing and Exporting Data (SKIP; You will cover this material later in D211.)
- Videos
- Summary

## Chapter 8: Analytics Using Complex Data Types (SKIP)

- Introduction
- Date and Time Data Types for Analysis
- Performing Geospatial Analysis in Postgres
- Using Array Data Types in Postgres

- Using JSON Data Types in Postgres
- Text Analytics Using Postgres
- Summary

## Chapter 9: Performant SQL (SKIP)

- Introduction
- Database Scanning Methods
- Performant Joins
- Functions and Triggers
- Summary

## Chapter 10: Using SQL to Uncover the Truth – a Case Study (SKIP)

- Introduction
- Case Study
- Summary

## 9. Practice Test

## Here's what you get

### 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.

## 10. 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

## **Welcome to Data Acquisition**

- Sandbox Lab
- PostgreSQL

## **The Basics of SQL for Analytics**

- Conceptual Schema - ER Model
- Physical Schema - ER Model
- Creating a Database
- Creating a Database
- Create Table
- Display Table and Table Structure
- Creating a Table
- Creating a Table to Store Encryption Keys
- Create Table
- Display Table and Table Structure
- Creating a Table
- Creating a Table to Store Login Information
- Retrieving Data from a Table
- Retrieving Specific Column Data from a Table
- Selecting Specific Columns from a Table
- Retrieving Data from a Table
- Retrieving Specific Column Data from a Table
- Update Data in a Table
- Adding New Data in a Table
- Copying Data from One Table to Another Table
- Updating Data in a Table
- Updating Specific Data in a Table
- Adding Data in the Table
- Update Data in a Table
- Adding New Data in a Table
- Copying Data from One Table to Another Table
- Updating Data in a Table
- Updating Specific Data in a Table
- Adding Data in the Table

- Selecting Specific Columns from a Table
- Adding a Column in a Table
- Modifying a Column in a Table
- Adding a Comment
- Inserting Data from One Table to Another
- Adding a New Column in a Table
- Using ALTER Command to Modify a Column in a Table
- Adding a Column in a Table to Store timestamp
- Modifying a Column in a Table to Include a Comment
- Adding a Column in a Table
- Modifying a Column in a Table
- Adding a Comment
- Inserting Data from One Table to Another
- Adding a New Column in a Table
- Using ALTER Command to Modify a Column in a Table
- Adding a Column in a Table to Store Timestamp
- Modifying a Column in a Table to Include a Comment
- Dropping a Database
- Dropping a Database
- Delete Rows
- Deleting Specific Data from a Table
- Delete Rows
- Deleting Specific Data from a Table
- Deleting a Table
- Deleting All the Data from a Table
- Deleting a Column from a Table
- Deleting a Table
- Deleting All the Data from a Table
- Deleting a Column from a Table

### **SQL for Data Preparation**

- Joining Tables
- Joining Tables
- Using DISTINCT Keyword
- Using DISTINCT Keyword

## **Aggregate Functions for Data Analysis**

- Using COUNT Function in GROUP BY Clause
- Using CONCAT Function
- Using CONCAT Function
- Using ORDER BY Clause
- Displaying Data in Alphabetical Order
- Using GROUP BY Clause
- Using ORDER BY Clause
- Displaying Data in Alphabetical Order
- Using GROUP BY Clause
- Using COUNT Function in GROUP BY Clause
- Using Operators in GROUP BY Clause
- Using Operators in GROUP BY Clause
- Normalizing the Unnormalized Model to 1NF
- Normalizing from 1NF to 2NF
- Normalizing the 2NF to 3NF

## **Importing and Exporting Data**

- Create a View
- Creating a View
- Creating a View Using UNION Operator
- Create a View
- Creating a View
- Creating a View Using the UNION Operator

## **Performant SQL (SKIP)**

- Create an Index
- Create an Index
- Creating a Function

**Here's what you get**

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**LIVE LABS**

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