



Reading: Course 2 overview



to Course 2

Hello, and welcome to **The Path to Insights: Data Models and Pipelines**, the second course in the Google Business Intelligence Certificate. You're on an exciting journey!

By the end of this course, you will be able to use data modeling and ETL processes to extract data from source systems, transform it into formats that better enable analysis, and drive business processes and goals.

Course descriptions

The Google Business Intelligence Certificate has four courses. **The Path to Insights: Data Models and Pipelines** is the second course.



Foundations of
Business Intelligence

The Path to Insights:
Data Models and Pipelines

Decisions, Decisions:
Dashboards and Reports

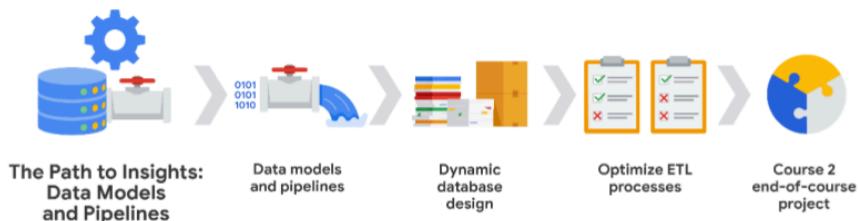
1. **Foundations of Business Intelligence** — Discover the role of BI professionals within an organization and the career paths they typically follow. Then, explore core BI practices and tools and learn how BI professionals use them to make a positive impact on organizations.
2. **The Path to Insights: Data Models and Pipelines** — (*current course*) Explore data modeling and ETL processes for extracting data from source systems, transforming it into formats that better enable analysis, and driving business processes and goals.

3. **Decisions, Decisions: Dashboards and Reports** — Apply your knowledge of BI and data modeling to create dynamic dashboards that track key performance indicators to meet stakeholder needs.
4. **Accelerate Your Job Search with AI** — Gain practical job search strategies and learn how to leverage AI tools (like Gemini and NotebookLM) to uncover your most valuable skills, create a job search plan, manage your applications, and practice for interviews as you navigate your path to your next role.

Course 2 content

Each course of this certificate program is broken into modules. You can complete courses at your own pace, but the module breakdowns are designed to help you finish the entire Google Business Intelligence Certificate in two to four months.

What's to come? Here's a quick overview of the skills you'll learn in each module of this course.



Module 1: Data models and pipelines

You will start this course by exploring data modeling foundations, as well as common schemas and key database elements. You will also consider how business needs determine the kinds of database systems that a BI professional might implement. You will then shift to learning about pipelines and ETL processes, which are the tools that move data throughout the system and make sure it's accessible and useful. Along the way, you will add many more important tools to your BI toolbox.

Module 2: Dynamic database design

In this part of the course, you will learn more about database systems, including data marts, data lakes, data warehouses, and ETL processes. You will also investigate the five factors of database performance: workload, throughput, resources, optimization, and contention. Finally, you will begin thinking about how to design efficient queries that get the most from your system.

Module 3: Optimize ETL processes

In this section of the course, you will learn about ETL quality testing, data schema validation, verifying business rules, and general performance testing. You will also explore data integrity and learn how built-in quality checks help you discover data defects. Finally, you will learn how to verify business rules and conduct general performance testing to make sure pipelines fulfill the intended business need.

Module 4: Course 2 end-of-course project

In the second end-of-course project, you will create a pipeline process to deliver necessary data to a target table. Then, you will use that target table to develop reports based on project needs. After you create the pipeline, you will also ensure that it is performing correctly and that there are built-in defenses against data quality issues.

What to expect

Each course offers many types of learning opportunities:

- **Videos** led by Google instructors teach new concepts, introduce the use of relevant tools, offer career support, and provide inspirational personal stories.
- **Readings** build on the topics discussed in the videos, introduce related concepts, share useful resources, and describe case studies.
- **Self-review activities** and **labs** give you hands-on practice in applying the skills you are learning and allow you to assess your own work by comparing it to a completed example.
- **Practice quizzes** allow you to check your understanding of key concepts and provide valuable feedback.
- **Graded quizzes** demonstrate your understanding of the main concepts of a course. You must score 80% or higher on each graded quiz to obtain a certificate, and you can take a graded quiz multiple times to achieve a passing score.

Tips for success

- It is strongly recommended that you go through the items in each lesson in the order they appear because new information and concepts build on previous knowledge.
 - Participate in all learning opportunities to gain as much knowledge and experience as possible.
 - If something is confusing, don't hesitate to replay a video, review a reading, or repeat a self-review activity.
 - When you encounter useful links in this course, bookmark them so you can refer to the information later for study or review.
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