

# Database Engineering & PostgreSQL

Schema design, indexing, query optimization, migrations, and managing production databases under load.

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## Program Overview

PRICE  
\$3,350

DURATION  
6 weeks

FORMAT  
Hybrid

LEVEL  
Intermediate

Schema design, indexing, query optimization, migrations, and managing production databases under load. This professional track is structured for adult learners who need practical, career-relevant depth without academic abstraction. Delivered as a hybrid experience, the course combines guided milestones, implementation reviews, and applied exercises aligned with modern AI, engineering, and technical leadership work.

## What You Will Learn

- Design schemas that balance flexibility, integrity, and performance.
  - Optimize queries and indexes for production workloads.
  - Plan safe migrations and operational database changes.
  - Diagnose database bottlenecks using evidence instead of guesswork.
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## What Is Included

- 6 hybrid weeks of database modeling and optimization labs.
  - PostgreSQL tuning worksheets and migration templates.
  - Indexing and explain-plan practice sets.
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- Production incident case studies for data systems.

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## Weekly Syllabus

### WEEK 1

#### Schema Design for Production

Model data structures that stay durable as products and teams evolve.

Topics: Normalization, Constraints, Relational tradeoffs

### WEEK 2

#### PostgreSQL Query Mechanics

Understand how PostgreSQL executes queries and why some patterns degrade.

Topics: Query planning, Joins, Aggregations

### WEEK 4

#### Indexing and Performance

Choose and evaluate indexes based on real workloads and explain plans.

Topics: B-tree and composite indexes, EXPLAIN, Performance tuning

### WEEK 6

#### Migrations and Operations

Ship schema changes safely while protecting data quality and uptime.

Topics: Migration strategy, Backups, Operational playbooks

## Instructor

Priya Nair

Priya is a data infrastructure architect focused on resilient PostgreSQL systems, query performance, and operational excellence.

This EvoMind syllabus is an admissions overview for planning and evaluation. Final cohort dates, live session timing, assessments, and platform access details are shared in the welcome packet after enrollment.

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