# MySQL Course Table of Contents

## MySQL Administrator Course ToC

### Part 1: Introduction to MySQL Administration

#### Overview of MySQL

* What is MySQL?
* MySQL Editions: Community vs. Enterprise
* MySQL Server Architecture

#### Installing and Configuring MySQL

* Installation on Windows, Linux, and macOS
* Initial Configuration and Startup Options
* MySQL Configuration Files (my.cnf, my.ini)

### Part 2: Core Administration Tasks

#### User Management and Security

* Creating, Modifying, and Deleting Users
* Granting and Revoking Privileges
* Roles and Authentication Plugins

#### Database Backup and Restore

* Types of Backups: Logical vs. Physical
* Using mysqldump and mysqlpump
* Restoring Databases and Point-in-Time Recovery

#### Monitoring MySQL Performance

* Performance Schema Overview
* Analyzing Slow Queries with Slow Query Log
* Using Tools like MySQL Workbench and Percona Toolkit

#### Replication and High Availability

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* Introduction to Group Replication and MySQL Cluster
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#### Maintenance and Upgrades

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* Upgrading MySQL Versions Safely
* Cleaning Logs and Tables

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* MyISAM vs. InnoDB Storage Engines
* Configuring Tablespaces and Data Files

#### Performance Tuning and Optimization

* Tuning Configuration Parameters
* Query Optimization and Indexing Best Practices
* Using EXPLAIN and Optimizer Trace

#### MySQL Security Best Practices

* Securing Connections with SSL/TLS
* Data Encryption at Rest and in Transit
* Preventing SQL Injection

#### Automation and Scheduling

* Using MySQL Events for Task Scheduling
* Automating Backups and Maintenance

### Part 4: Hands-on Exercises

#### Practical Tasks for MySQL Admins

* Setting up and Testing Replication
* Simulating a Database Recovery Scenario
* Analyzing and Optimizing Slow Queries