Information Booklet cum Syllabus

of

Database with MYSQL

April 2025

National Institute of Electronics and Information Technology
An Autonomous Scientific Society under
Ministry of Electronics and Information Technology, Government of India

NIELIT Gorakhpur
MMMUT Campus, Deoria Road
Gorakhpur (U.P.)-273010

Nishant Tripathi, Mob: 8317093869

CONTENTS

1. About Course.

A MySQL course teaches you how to create, manage, and query databases using MySQL, one of the most widely used relational database systems. You'll learn basic SQL commands like SELECT, INSERT, UPDATE, and DELETE, as well as how to design tables, define relationships with primary and foreign keys, and use advanced queries like JOINs, subqueries, and aggregate functions. The course often covers database optimization, indexing, security, and backup strategies, making it useful for web developers, data analysts, and anyone working with data. By completing it, you gain practical skills to store, retrieve, and analyze data efficiently, which are essential for careers in backend development, database administration, and data management.

2. NIELIT

National Institute of Electronics and Information Technology, NIELIT, (Erstwhile DOEACC Society) is an autonomous scientific society of the Ministry of Electronics & Information Technology, Government of India. The Society is registered under the Societies Registration Act, 1860. NIELIT was set up to carry out Human Resource Development and related activities in the area of Information, Electronics & Communications Technology (IECT). NIELIT is engaged both in Formal & Non-Formal Education in the areas of IECT besides development of industry-oriented quality education and training programmer in the state-of-the-art areas. NIELIT has endeavored to establish standards to be the country's premier institution for Examination and Certification in the field of IECT. It is also one of the National Examination Body, which accredits institutes/organizations for conducting courses in IT and Electronics in the non-formal sector.

3. Objective of Course

The objective of a MySQL course is to equip learners with the skills to efficiently create, manage, and manipulate relational databases using MySQL. It aims to teach the fundamentals of SQL, including data retrieval, insertion, updating, and deletion, as well as database design principles like tables, keys, and relationships. The course also seeks to develop the ability to write advanced queries, optimize database performance, ensure data integrity, and implement security and backup measures. Ultimately, the goal is to prepare students or professionals to handle real-world data management tasks, supporting careers in web development, database administration, and data analysis.

4. Job Roles of Course

- **Database Administrator (DBA) –** Responsible for installing, configuring, maintaining, and securing databases, ensuring they run efficiently and safely.
- **Backend Developer –** Uses MySQL to store and manage data for web or mobile application
- **Data Analyst –** Extracts, analyzes, and visualizes data from MySQL databases tosupport business decisions.
- **Data Engineer –** Designs and manages database systems and pipelines, ensuring data flows smoothly between applications.

5. Eligibility

Anyone with basic computer knowledge can learn MySQL; programming or database experience is optional for beginners, but helpful for advanced courses.

Total duration of the Course : 15 Days / 30 Hours

Course Content.

- **Introduction to Databases** – Basics of databases, DBMS, and MySQL.
- **SQL Fundamentals** – SELECT, INSERT, UPDATE, DELETE, WHERE, ORDER BY.
- **Database Design** – Tables, data types, primary & foreign keys, normalization.
- **Advanced Queries** – JOINs, subqueries, aggregate functions, GROUP BY, HAVING.
- **Indexes and Views** – Optimizing queries and creating views.
- Stored Procedures & Triggers – Automating tasks in the database.
- **Database Security** – User roles, permissions, and authentication.
- **Backup & Recovery** – Ensuring data safety and recovery methods.