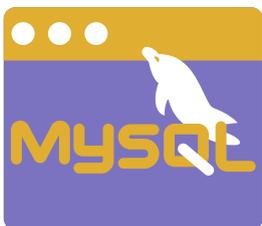




**IDM** TECHPARK  
GUIDE'S FOR PERFECT CAREER PATHWAY



# MYSQL Course Syllabus



**N.S.D.C**  
National  
Skill Development  
Corporation





# About Us

IDMTECHPARK global retail & corporate training solutions provider in Coimbatore, Erode, Trichy & Salem that offers a comprehensive range of training and placement services for both fresher's and professionals seeking new opportunities. The company commenced its IT training business in 2016. A pioneer in IT education, over the years, we have trained over 50k students. Idmtechpark has a wide range of courses, maintains education standards & provides placement assistance.

[www.idmtechparkcoimbatore.com](http://www.idmtechparkcoimbatore.com)  
[www.idmtechparkerode.com](http://www.idmtechparkerode.com)

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# About IDMTECHpark Education Quality

IDMTECHPARK is managed and developed by industry specialists with more than 8 years of expertise in the field. IDMTECHPARK offers a staff of highly skilled professional trainers who deliver effective IT training in a friendly setting, concentrating on the needs of each individual to help them succeed in a demanding work world. In the book of career and success, our staff never leaves a page unturned.

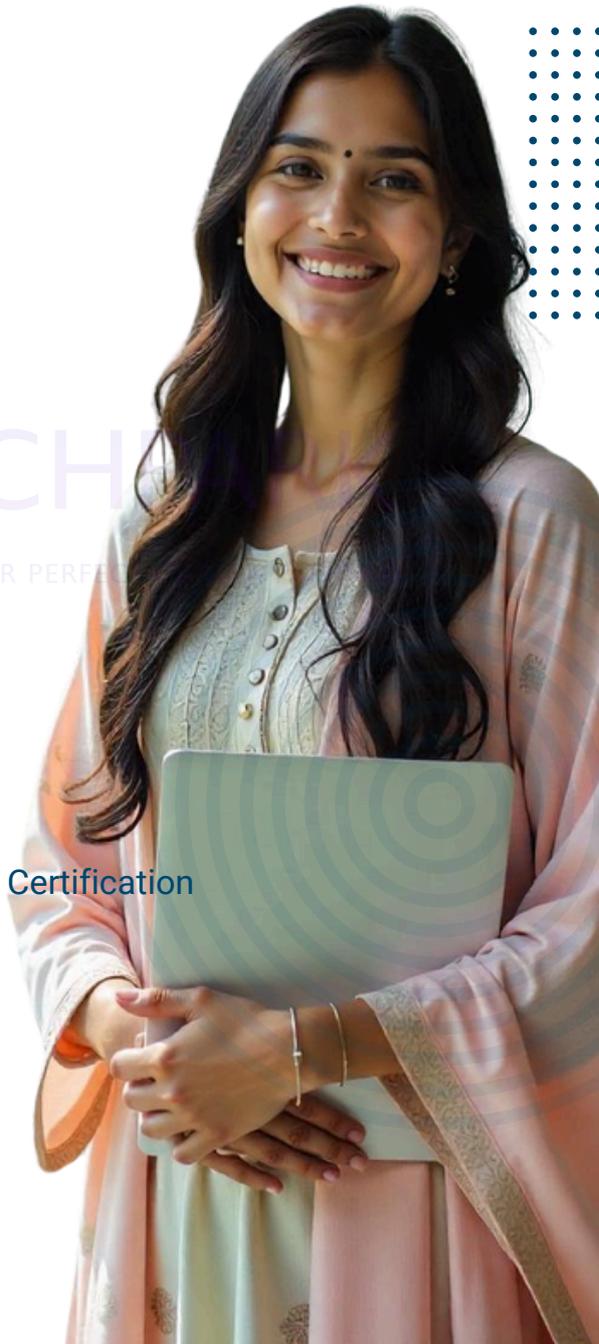
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IDMTECHPARK's versatile instructor-led training class rooms and lower-class sizes enable people to engage more easily and absorb knowledge, resulting in remarkable results for both themselves and the organizations for which they work. Our training programmes are adaptable and customizable to ensure that each participant gets the most out of their time with us. IDMTECHPARK focuses in providing hands-on IT training in over 30 different courses.

- We teach in-demand courses
- We provide impactful learning material
- Our teachers are well-selected & trained
- We follow world-class teaching methods
- Our courses include E-Projects
- We conduct technical workshops
- Exams are held and based on Exams providing Certification
- Certificates are recognized the world over
- Our course timings are flexible



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# Our Recent Placement

Idmtechpark assists students in getting job placements on successful completion of their courses. Idmtechpark also provides recruitment assistance to organizations. Idmtechpark students are shortlisted based on the organization's requirement. To make students job-ready, Idmtechpark conducts workshops e.g. How to do Group Discussions, how to behave in a Personal Interview. From time to time, job fairs & campus recruitments are conducted. Workplace skills such as time management, making effective presentations and communication skills are also provided. All this helps students find appropriate jobs in the IT industry while also helping save companies recruitment costs.

**Krishnaveni M**

Frutterlabs





**IDM TECHPARK** ISO 9001 CERTIFIED  
PLACEMENT **Achiever**  
*Congratulations*  
Salary **2.4** LAKHS Per Annum  
**Joswa**  
[2020 - Passed Out]  
Junior React Developer  
ccessor  
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**Joshwa**  
Xccessor



**IDM TECHPARK** ISO 9001 CERTIFIED  
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**IDM TECHPARK** ISO 9001 CERTIFIED  
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**Madhumitha**  
Accenture

**Keerthana**  
AJS



ISO 9001 CERTIFIED

PLACEMENT Achiever

*Congratulations*

Salary **2.1** LAKHS Per Annum

**Keerthana**  
[2018 - Passed Out]  
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ISO 9001 CERTIFIED

PLACEMENT Achiever

*Congratulations*

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Junior Digital Marketer

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**Brindha Boopathi**  
AJS

**Kavin Kumar**  
AJS



ISO 9001 CERTIFIED

PLACEMENT Achiever

*Congratulations*

Salary **3.2** LAKHS Per Annum

**Kavin kumar**  
[2021 - Passed Out]  
Web Developer

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**Ajithkumar**  
AJS



**IDM TECHPARK** ISO 9001 CERTIFIED  
PLACEMENT Achiever  
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**IDM TECHPARK** ISO 9001 CERTIFIED  
PLACEMENT Achiever  
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UI/UX Designer  
  
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**Gowthami**  
Genpact

**Surya**  
ZUCI



**IDM TECHPARK** ISO 9001 CERTIFIED  
PLACEMENT Achiever  
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**Pavithra**  
Vel Info Tech



ISO 9001 CERTIFIED

PLACEMENT Achiever

*Congratulations*

Salary **3** LAKHS Per Annum

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[2018 - Passed Out]  
MERN Stack Developer

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ISO 9001 CERTIFIED

PLACEMENT Achiever

*Congratulations*

Salary **2.4** LAKHS Per Annum

**Poovitha**  
[2018 - Passed Out]  
Flutter Developer

GM GRAY MATTER

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**Poovitha**  
Gray Matter

**Ramesh**  
TDT



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PLACEMENT Achiever

*Congratulations*

Salary **2** LAKHS Per Annum

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**Siva Sankar**  
ST Cloudspark tech



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PLACEMENT Achiever

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Salary **3.2** LAKHS Per Annum

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[2018 - Passed Out]  
Software Engineer

**Cloudspark Tech**  
Knowledge | Growth | Success

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PLACEMENT Achiever

*Congratulations*

Salary **1.4** LAKHS Per Annum

**Mohammed Nabeel Hisham**  
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**Nabeel Hisham**  
VTail

**Kalayarasan**  
Violet Infotech



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PLACEMENT Achiever

*Congratulations*

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**Kalayarasan**  
[2021 - Passed Out]  
Junior Python Developer

**Violet Infotech**  
Software Solutions

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4

# Our Alumni Working At



## MODULE 1

# Introduction to Databases and MySQL

- Overview of Databases
- Introduction to RDBMS (Relational Database Management System)
- Installation of MySQL
- Basic MySQL Architecture
- MySQL Client and Command-Line Interface (CLI)

## MODULE 2

# MySQL Database Basics

- Introduction to MySQL Database
- Creating and Managing Databases
- Overview of MySQL Data Types
- Viewing Database Information and Tables
- Understanding Database Structure (Schemas, Tables)

## MODULE 3

# SQL Basics – Select and Insert

- SELECT Statement: Retrieving Data
- Using WHERE Clause for Filtering
- Using DISTINCT to Avoid Duplicates
- INSERT INTO Statement for Adding Data
- Inserting Multiple Rows into Tables

## MODULE 4

# Data Types and Constraints

- Overview of MySQL Data Types (Numeric, Date, String, etc.)
- Working with Constraints (NOT NULL, UNIQUE, PRIMARY KEY, FOREIGN KEY)
- Default Values in Tables
- Auto-Increment Fields

## MODULE 5

# Updating and Deleting Data

- UPDATE Statement for Modifying Data
- DELETE Statement for Removing Data
- Conditional Updates and Deletes
- Transactions and Rollbacks

## MODULE 6

# Advanced SELECT Queries

- Sorting Data using ORDER BY
- Limiting Results with LIMIT
- Aggregate Functions (COUNT, AVG, MIN, MAX, SUM)
- Grouping Data with GROUP BY
- Filtering Grouped Data with HAVING

## MODULE 7

# Joins in SQL

- Introduction to Joins
- INNER JOIN, LEFT JOIN, RIGHT JOIN
- FULL OUTER JOIN (Simulated in MySQL)
- Self Joins and Cross Joins
- Using Aliases in Joins

## MODULE 8

# Subqueries

- Introduction to Subqueries
- Subqueries in SELECT, INSERT, UPDATE, and DELETE
- Correlated vs. Non-Correlated Subqueries
- Using EXISTS, IN, and NOT IN with Subqueries

## MODULE 9

# Indexing and Optimization

- Introduction to Indexes in MySQL
- Types of Indexes (Primary, Unique, Composite)
- Creating and Dropping Indexes
- Query Optimization Techniques using Indexes
- Analyzing Query Performance with EXPLAIN

## MODULE 10

# Views in MySQL

- What Are Views?
- Creating and Managing Views
- Advantages of Using Views
- Updating Data Through Views
- Dropping Views

## MODULE 11

# Stored Procedures and Functions

- Introduction to Stored Procedures
- Creating, Modifying, and Deleting Stored Procedures
- Input and Output Parameters in Stored Procedures
- Writing Functions in MySQL
- Error Handling in Stored Procedures

## MODULE 12

# Triggers in MySQL

- Introduction to Triggers
- Types of Triggers: BEFORE, AFTER
- Creating Triggers for INSERT, UPDATE, DELETE Operations
- Triggering Multiple Actions in a Single Trigger
- Dropping Triggers

## MODULE 13

# Transactions and ACID Properties

- Introduction to Transactions
- ACID Properties (Atomicity, Consistency, Isolation, Durability)
- COMMIT, ROLLBACK, and SAVEPOINT
- Using Transactions for Data Integrity
- Isolation Levels in MySQL

## MODULE 14

# Normalization and Relationships

- Introduction to Database Normalization
- First, Second, and Third Normal Forms (1NF, 2NF, 3NF)
- Fourth Normal Form and Boyce-Codd Normal Form
- Relationships in Databases (One-to-One, One-to-Many, Many-to-Many)
- Foreign Keys and Referential Integrity

## MODULE 15

# Data Import and Export

- Importing Data into MySQL (CSV, Excel)
- Exporting Data from MySQL to Different Formats
- Using the LOAD DATA INFILE Command
- Using mysqldump for Database Backup and Restore
- Importing and Exporting via phpMyAdmin

## MODULE 16

# Advanced Data Types and Features

- Working with JSON Data Type
- Using ENUM and SET Data Types
- Full-Text Indexing and Searching
- Using Spatial Data Types (for GIS applications)
- Working with Time Zones in MySQL

## MODULE 17

# User Management and Security

- Managing MySQL Users and Permissions
- Granting and Revoking Privileges
- Securing MySQL Database (Password Hashing, SSL Connections)
- Managing MySQL Roles
- Best Practices for Database Security

## MODULE 18

# Backup and Recovery

- Introduction to MySQL Backup Strategies
- Full and Incremental Backups
- Using mysqldump for Backup and Restoration
- Point-in-Time Recovery with Binary Logs
- Automating Backup Tasks

## MODULE 19

# MySQL Replication

- Introduction to Replication in MySQL
- Setting up Master-Slave Replication
- Configuring Multi-Master Replication
- Managing Replication in Large Scale Environments
- Monitoring and Troubleshooting Replication

## MODULE 20

# Partitioning in MySQL

- Introduction to Table Partitioning
- Types of Partitioning (Range, List, Hash, Key)
- Creating Partitioned Tables
- Benefits of Partitioning in Large Databases
- Managing and Dropping Partitions

## MODULE 21

# Performance Tuning and Monitoring

- Understanding Query Performance
- Using the SHOW STATUS Command
- Query Profiling with EXPLAIN
- Optimizing Complex Queries and Index Usage
- MySQL Performance Schema

## MODULE 22

# Advanced SQL Techniques

- Window Functions (ROW\_NUMBER, RANK, NTILE)
- Recursive Queries and Common Table Expressions (CTEs)
- Handling NULL Values and Conditional Aggregates
- Using CASE and COALESCE for Conditional Logic
- Writing Complex SQL Queries for Reports

## MODULE 23

# High Availability and Clustering

- Introduction to High Availability in MySQL
- Setting up MySQL Cluster
- MySQL Group Replication
- Load Balancing in MySQL
- High Availability vs. Fault Tolerance

## MODULE 24

# MySQL on Cloud

- Introduction to Cloud Databases (AWS RDS, Google Cloud SQL)
- Setting up MySQL on Cloud Providers
- Configuring Backup and Monitoring on Cloud
- Auto-scaling and High Availability in Cloud Databases
- Security Best Practices for Cloud Databases

## MODULE 25

# MySQL in Production Environments

- Preparing MySQL for Production Use
- Database Monitoring and Alerts
- Handling Data Growth and Archiving
- Scaling MySQL for High-Traffic Applications
- Troubleshooting Common Issues in Production

# Thank You

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