Below is a syllabus for a MySQL database management course:

Course Title: MySQL Database Management

Course Description: This course provides a comprehensive introduction to MySQL, a popular relational database management system (RDBMS). Students will learn fundamental concepts of database design, SQL query language, and database administration tasks using MySQL.

Prerequisites: Basic understanding of computer science concepts and familiarity with general-purpose programming languages is recommended.

Course Objectives:

1. Understand the principles of relational databases and the role of MySQL in data management.
2. Learn how to design and create databases using MySQL.
3. Develop proficiency in writing SQL queries to retrieve, manipulate, and manage data.
4. Explore advanced MySQL topics such as indexing, transactions, and stored procedures.
5. Gain hands-on experience in administering MySQL databases, including user management, backups, and security.

Course Outline:

1. **Introduction to MySQL**
   - Overview of relational databases
   - Introduction to MySQL RDBMS
   - Installing and setting up MySQL server
2. **MySQL Basics**
   - MySQL data types
   - Creating and managing databases
   - Creating tables and defining constraints
3. **SQL Basics**
   - Introduction to SQL (Structured Query Language)
   - SELECT statement and querying data
   - Filtering, sorting, and limiting results
4. **Data Manipulation with SQL**
   - Inserting, updating, and deleting data
   - Modifying table structure
   - Working with NULL values

5. **Advanced SQL Queries**
    - Joins (inner, outer, self)
    - Subqueries
    - Aggregate functions and grouping
6. **Indexes and Performance Optimization**
    - Understanding indexes and their types
    - Indexing strategies for performance optimization
    - Analyzing and optimizing queries
7. **Transactions and Concurrency Control**
    - Introduction to transactions
    - ACID properties
    - Locking mechanisms and concurrency control
8. **Stored Procedures and Functions**
    - Creating and executing stored procedures
    - Creating and using user-defined functions
    - Benefits and best practices
9. **MySQL Administration**
    - User account management
    - Backup and restore operations
    - Security considerations
10. **Database Design Best Practices**
    - Normalization and denormalization
    - Designing efficient database schemas
    - Data integrity and constraints

Assessment:

- Weekly assignments to reinforce learning concepts.
- Midterm exam covering topics covered in the first half of the course.
- Final project requiring students to design and implement a MySQL database system based on provided requirements.

Textbook: "Learning MySQL" by Robin Nixon

Additional Resources:

- Online tutorials and documentation (MySQL official documentation.
- Supplemental readings and materials provided by the instructor.

Grading:

- Assignments: 30%
- Midterm Exam: 20%

- Final Project: 40%
- Participation and Attendance: 10%

Attendance Policy: Regular attendance is expected. Students are allowed a maximum of three unexcused absences. Excessive absences may result in a reduction of the final grade.

Office Hours: Instructor office hours will be held twice a week for additional help and clarification.