



Western Technical College

10154108 Database Concepts with SQL

Course Outcome Summary

Course Information

Description	This course gives students an opportunity to learn basic database concepts and design principles. Students can then apply those concepts and principles in hands-on applications. They will master the concept of a relational database application by designing, populating, and joining relational tables using DBMS (database management software).
Career Cluster	Information Technology
Instructional Level	Associate Degree Courses
Total Credits	3
Total Hours	72

Textbooks

No textbook required.

Success Abilities

1. Live Responsibly: Develop Resilience
2. Refine Professionalism: Improve Critical Thinking
3. Refine Professionalism: Practice Effective Communication

Program Outcomes

1. Manage software.
2. Solve information technology problems.

Course Competencies

1. **Examine the purpose of database applications.**

Assessment Strategies

- 1.1. Lab applications

1.2. Project

Criteria

You will know you are successful when

- 1.1. you identify the purpose of a database.
- 1.2. you identify the main objects within a database.
- 1.3. you describe the differences between data and information.
- 1.4. you apply database terminology.

Learning Objectives

- 1.a. Identify types of problems that database applications solve.
- 1.b. Explore objects of a database.
- 1.c. Explore the database interface.
- 1.d. Differentiate between data and information.
- 1.e. Apply database terminology.

2. Design a database.

Assessment Strategies

- 2.1. Lab applications
- 2.2. Project

Criteria

You will know you are successful when

- 2.1. you create a requirements document based on user needs.
- 2.2. you organize database tables based on data.
- 2.3. you normalize the data.
- 2.4. you identify fields and primary and foreign keys.
- 2.5. you create relationships between tables.
- 2.6. you enforce referential integrity.

Learning Objectives

- 2.a. Analyze database requirements.
- 2.b. Determine tables and fields.
- 2.c. Determine primary key and foreign key.
- 2.d. Identify the purpose of normalization.
- 2.e. Create relationships between tables.
- 2.f. Enforce referential integrity.

3. Design tables.

Assessment Strategies

- 3.1. Lab applications
- 3.2. Project

Criteria

You will know you are successful when

- 3.1. you create a database file.
- 3.2. you create fields and set data types.
- 3.3. you set field properties.
- 3.4. you manage records.
- 3.5. you import data from other applications.
- 3.6. you export data to other applications.

Learning Objectives

- 3.a. Set field properties.
- 3.b. Manage records in datasheet view.
- 3.c. Find and filter data.
- 3.d. Import data from other applications.
- 3.e. Export data.

4. Use simple queries.

Assessment Strategies

- 4.1. Lab applications
- 4.2. Project

Criteria

You will know you are successful when

- 4.1. you create a simple query.
- 4.2. you join tables in a query.
- 4.3. you sort the query results.
- 4.4. you add criteria to a query.
- 4.5. you hide a field in a query.
- 4.6. you run a query.
- 4.7. you interpret query results.
- 4.8. you examine error messages.

Learning Objectives

- 4.a. Create simple queries.
- 4.b. Join tables in queries.
- 4.c. Sort a query.
- 4.d. Add Criteria to a Query.
- 4.e. Hide a Field in a Query.
- 4.f. Run a query.
- 4.g. Examine error messages.
- 4.h. Interpret query results.

5. Modify queries.

Assessment Strategies

- 5.1. Lab applications
- 5.2. Project

Criteria

You will know you are successful when

- 5.1. you use comparison operators in queries.
- 5.2. you use the expression builder.
- 5.3. you use wildcard characters.
- 5.4. you set top values in a query.
- 5.5. you create calculated fields.
- 5.6. you create function queries.
- 5.7. you create parameter queries.
- 5.8. you create concatenation in a query.
- 5.9. you create action queries.
- 5.10. you use advanced query wizards for other purposes.

Learning Objectives

- 5.a. Use operators in queries.
- 5.b. Use the expression builder.
- 5.c. Use wildcard characters.
- 5.d. Set top values in a query.
- 5.e. Create calculated fields .
- 5.f. Create function queries.
- 5.g. Create parameter queries.
- 5.h. Create concatenation in a query.
- 5.i. Create action queries.
- 5.j. Explore advanced query wizards.

6. Explore Structured Query Language (SQL).

Assessment Strategies

- 6.1. Lab applications
- 6.2. Project

Criteria

You will know you are successful when

- 6.1. you create SQL code.
- 6.2. you run SQL code.
- 6.3. you troubleshoot SQL code.
- 6.4. you resolve errors in the SQL code.

Learning Objectives

- 6.a. Identify reasons for utilizing SQL in a database application.
- 6.b. Explore SQL language statements and syntax.
- 6.c. Practice writing SQL queries.
- 6.d. Write SQL code using SELECT, FROM, WHERE, ORDER BY, AS, AND, OR, and NOT.

7. Create forms.

Assessment Strategies

- 7.1. Lab applications
- 7.2. Project

Criteria

You will know you are successful when

- 7.1. you create a form using multiple methods.
- 7.2. you modify form bound and unbound controls.
- 7.3. you manage records using a form.
- 7.4. you print a record from a form.

Learning Objectives

- 7.a. Explore methods of creating forms.
- 7.b. Modify bound and unbound controls.
- 7.c. Manage records in a form.
- 7.d. Print a selected record.

8. Use advanced form controls.

Assessment Strategies

- 8.1. Lab applications
- 8.2. Project

Criteria

You will know you are successful when

- 8.1. you create a Combo Box.
- 8.2. you create a List Box.
- 8.3. you create an Option Group.
- 8.4. you add a Logic Control.
- 8.5. you control the tab order.
- 8.6. you add a form header and footer.

Learning Objectives

- 8.a. Create a Combo Box.
- 8.b. Create a List Box.
- 8.c. Create an Option Group.
- 8.d. Add a Logic Control.
- 8.e. Control the tab order.
- 8.f. Add a form header and footer.

9. Create reports.

Assessment Strategies

- 9.1. Lab applications
- 9.2. Project

Criteria

You will know you are successful when

- 9.1. you create a report using multiple methods.
- 9.2. you modify report bound and unbound controls.
- 9.3. you group and summarize report data.
- 9.4. you print reports.

Learning Objectives

- 9.a. Explore methods of creating a report.
- 9.b. Modify bound and unbound controls.
- 9.c. Print reports.
- 9.d. Group and summarize report data.

10. Use Advanced Report Design.

Assessment Strategies

- 10.1. Lab applications
- 10.2. Project

Criteria

You will know you are successful when

- 10.1. you add report sections.
- 10.2. you create a calculated control.
- 10.3. you create a running summary.
- 10.4. you insert a Date/Time control.
- 10.5. you insert a page break.
- 10.6. you explore page setup properties.
- 10.7. you use the label wizard.

Learning Objectives

- 10.a. Add report sections.
- 10.b. Create a calculated control.
- 10.c. Create a running summary.
- 10.d. Insert a Date/Time control.
- 10.e. Insert a page break.
- 10.f. Explore page setup properties.
- 10.g. Use the label wizard.