

EASTERN ARIZONA COLLEGE

Database Management with Microsoft Access

Course Design
2016-2017

Course Information

Division Business
Course Number CMP 170
Title Database Management with Microsoft Access
Credits 3
Developed by Lydia Mata
Lecture/Lab Ratio 2 Lecture/2 Lab

Transfer Status

ASU	NAU	UA
Elective Credit	Elective Credit NAU Extended Campuses: ECCL Departmental Elective	Non Transferable

Activity Course No
CIP Code 11.0100
Assessment Mode Pre/Post Test (50 Questions/100 Points)
Semester Taught Fall and Spring
GE Category None
Separate Lab No
Awareness Course No
Intensive Writing Course No

Prerequisites

CMP 101 or CMP 103

Educational Value

This course is designed to acquaint students with the general principles of computerized database management and its relationship to information systems. It is required for all Computer Department AAS degrees beginning with the 2004-2006 catalogs. Community students will benefit from a greater understanding of information management as it relates to business and governmental organizations.

Description

The student will participate in case-based approaches to the storing, modification, and extraction of information from a computerized database management system. The student will learn how to create and maintain database objects including tables, forms, queries, reports, pages, macros, and modules. Database design, security, and integration with other programs and the Internet is also covered. Student interested in Microsoft Office Specialist certification will find the course an excellent foundation for exam preparation.

Supplies

USB flash drive.

Competencies and Performance Standards

1. Create a typical database containing customer, contract, and invoice data.

Learning objectives

What you will learn as you master the competency:

- a. Define the terms field, record, table, relational database, primary key, and foreign key.
- b. Create a blank database.
- c. Identify the components of the Microsoft Access window.
- d. Create and save a table in Datasheet view.
- e. Enter field names and records in a table datasheet.
- f. Open a table using the Navigation Pane.
- g. Open an Access database.
- h. Copy and paste records from another Access database.
- i. Navigate a table datasheet.
- j. Create and navigate a simple query.
- k. Create and navigate a simple form.
- l. Create, preview, navigate, and print a simple report.
- m. Manage a database by compacting, backing up, and restoring a database.

Performance Standards

Competence will be demonstrated:

- o in successful completion of multiple choice quizzes and practical exams
- o in successful completion of lab assignments and projects

Criteria - Performance will be satisfactory when:

- o learner defines the term fields, record, table, relational database, primary key, and foreign key
- o learner creates a blank database
- o learner identifies the components of the Microsoft Access window
- o learner creates and saves a table in Datasheet view
- o learner enters field names and records in a table datasheet
- o learner opens a table using the Navigation Pane
- o learner opens an Access database
- o learner copies and pastes records from another Access database
- o learner navigates a table datasheet
- o learner creates and navigates a simple query
- o learner creates and navigates a simple form
- o learner creates, previews, navigates, and prints a simple report
- o learner manages a database by compacting, backing up, and restoring a database

2. Build a database and define table relationships.

Learning objectives

What you will learn as you master the competency:

- a. Review the guidelines for designing databases and setting field properties.
- b. View and modify field data types and formatting.
- c. Create a table in Design view.
- d. Define fields and specify a table's primary key.
- e. Modify the structure of a table.
- f. Import data from an Excel worksheet.
- g. Create a table by importing an existing table structure.
- h. Delete, rename, and move fields.
- i. Add data to a table by importing a text file.
- j. Define a relationship between two tables.

Performance Standards

Competence will be demonstrated:

- o by successful completion of laboratory assignments/projects
- o by multiple choice quizzes and practical exams

Criteria - Performance will be satisfactory when:

- o learner reviews the guidelines for designing databases and setting field properties
- o learner views and modifies field data types and formatting
- o learner creates a table in Design view
- o learner defines fields and specifies a table's primary key
- o learner modifies the structure of a table
- o learner imports data from an Excel worksheet
- o learner creates a table by importing an existing table structure
- o learner deletes, renames, and moves fields
- o learner adds data to a table by importing a text file
- o learner defines a relationship between two tables

3. Maintain and query a database.

Learning objectives

What you will learn as you master the competency:

- a. Find, modify, and delete records in a table.
- b. Learn how to use the Query window in Design view.
- c. Create, run, and save queries.
- d. Update data using a query datasheet.
- e. Create a query based on multiple tables.
- f. Sort data in a query.
- g. Filter data in a query.
- h. Specify an exact match condition in a query.
- i. Change the font size and alternating row color in a datasheet.

- j. Use a comparison operator in a query to match a range of values.
- k. Use the And and Or logical operators in queries.
- l. Create and format a calculated field in a query.
- m. Perform calculations in a query using aggregate functions to record group calculations.
- n. Change the display of database objects in the Navigation Pane.

Performance Standards

Competence will be demonstrated:

- o by successful completion of laboratory assignments/projects
- o by multiple choice quizzes and practical exams

Criteria - Performance will be satisfactory when:

- o learner finds, modifies, and deletes records in a table
- o learner understands how to use the Query window in Design view
- o learner creates, runs, and saves queries
- o learner updates data using a query datasheet
- o learner creates a query based on multiple tables
- o learner sorts data in a query
- o learner filters data in a query
- o learner specifies an exact match condition in a query
- o learner changes the font size and alternating row color in a datasheet
- o learner uses a comparison operator in a query to match a range of values
- o learner uses the And and Or logical operators in queries
- o learner creates and formats a calculated field in a query
- o learner performs calculations in a query using aggregate functions to record group calculations
- o learner changes the display of database objects in the Navigation Pane

4. Create forms and reports.

Learning objectives

What you will learn as you master the competency:

- a. Create a form using the Form Wizard.
- b. Modify a form's design in Layout View.
- c. Change a form's AutoFormat.
- d. Add a picture to a form.
- e. Change the color, line type, and position of items in a form.
- f. Navigate a form and find data using a form.
- g. Maintain table data using a form.
- h. Preview and print selected form records.
- i. Create a form with a main form and a subform.
- j. Create a report using the Report Wizard.
- k. Modify a report's design in Layout view.
- l. Move and resize fields in a report.
- m. Insert a picture in a report.

- n. Change the font color of a report title.
- o. Use conditional formatting in a report.
- p. Preview and print a report.

Performance Standards

Competence will be demonstrated:

- o by successful completion of laboratory assignments/projects
- o by multiple choice quizzes and practical exams

Criteria - Performance will be satisfactory when:

- o learner creates a form using the Form Wizard
- o learner modifies a form's design in Layout View
- o learner changes a form's AutoFormat
- o learner adds a picture to a form
- o learner changes the color, line type, and position of items in a form
- o learner navigates a form and finds data using a form
- o learner maintains table data using a form
- o learner previews and prints selected form records
- o learner creates a form with a main form and a subform
- o learner creates a report using the Report Wizard
- o learner modifies a report's design in Layout view
- o learner moves and resizes fields in a report
- o learner inserts a picture in a report
- o learner changes the font color of a report title
- o learner uses conditional formatting in a report
- o learner previews and prints a report

5. Create advanced queries and enhance table design.

Learning objectives

What you will learn as you master the competency:

- a. Review table and object naming standards.
- b. Use the Like, In, Not, and & operators in queries.
- c. Filter data using an AutoFilter.
- d. Use the If function to assign a conditional value to a calculated field in a query.
- e. Create a parameter query.
- f. Use query wizards to create a crosstab query, a find duplicates query, and a find unmatched query.
- g. Create a top values query.
- h. Modify table designs using lookup fields, input masks, and data validation rules.
- i. Identify object dependencies.
- j. Review a Memo field's properties.
- k. Designate a trusted folder.

Performance Standards

Competence will be demonstrated:

- by successful completion of laboratory assignments/projects
- by multiple choice quizzes and practical exams

Criteria - Performance will be satisfactory when:

- learner reviews table and object naming standards
- learner uses the Like, In, Not, and & operators in queries
- learner filters data using an AutoFilter
- learner uses the If function to assign a conditional value to a calculated field in a query
- learner creates a parameter query
- learner uses query wizards to create a crosstab query, a find duplicates query, and a find unmatched query
- learner creates a top values query
- learner modifies table designs using lookup fields, input masks, and data validation rules
- learner identifies object dependencies
- learner reviews a Memo field's properties
- learner designates a trusted folder

6. Use Form Tools to create custom forms.

Learning objectives

What you will learn as you master the competency:

- a. Change a lookup field to a Text field.
- b. View and print database documents.
- c. Create datasheet, multiple items, and split forms.
- d. Modify a form and anchor form controls in Layout view.
- e. Plan, design, and create a custom form in Design view and in Layout view.
- f. Select, move, align, resize, delete, and rename controls in a form.
- g. Add a combo box to a form.
- h. Add form headers and footers to a form.
- i. Add a combo box to a form to find records.
- j. Add a subform to a form.
- k. Add calculated controls to a form and a subform.
- l. Change the tab order in a form.
- m. Improve the appearance of a form.

Performance Standards

Competence will be demonstrated:

- by successful completion of laboratory assignments/projects
- by multiple choice quizzes and practical exams

Criteria - Performance will be satisfactory when:

- learner changes the lookup field to a Text field
- learner views and prints database documents
- learner creates a datasheet, multiple items, and split forms

- learner modifies a form and anchors form controls in Layout View
- learner plans, designs, and creates a custom form in Design view and in Layout view
- learner selects, moves, aligns, resizes, deletes, and renames controls in a form
- learner adds a combo box to a form
- learner adds form headers and footer to a form
- learner adds a combo box to a form to find records
- learner adds a subform to a form
- learner adds calculated controls to a form and a subform
- learner changes the tab order in a form
- learner improves the appearance of a form

7. Create custom reports.

Learning objectives

What you will learn as you master the competency:

- a. View, filter, and copy report information in Report view.
- b. Modify a report in Layout view.
- c. Modify a report in Design view.
- d. Design and create a custom report.
- e. Sort and group data in a report.
- f. Add, move, resize, and align controls in a report.
- g. Add lines to a report.
- h. Hide duplicate values in a report.
- i. Add the date, page numbers, and title to a report.
- j. Create and modify mailing labels.

Performance Standards

Competence will be demonstrated:

- by successful completion of laboratory assignments/projects
- by multiple choice quizzes and practical exams

Criteria - Performance will be satisfactory when:

- learner views, filters, and copies report information in Report view
- learner modifies a report in Layout view
- learner modifies a report in Design view
- learner designs and creates a custom report
- learner sorts and groups data in a report
- learner adds, moves, resizes, and aligns controls in a report
- learner adds lines to a report
- learner hides duplicate values in a report
- learner adds the date, page numbers, and title to a report
- learner creates and modifies mailing labels

8. Share, integrate, and analyze data.

Learning objectives

What you will learn as you master the competency:

- a. Export an Access table to an HTML document and view the document.
- b. Import a CSV file as an Access table.
- c. Use the Table Analyzer.
- d. Import and export XML files.
- e. Save and run import and export specifications.
- f. Create a multi-page form using a tab control.
- g. Embed a chart in a form.
- h. Create and modify PivotTables and PivotCharts.
- i. Link data from an Excel worksheet.

Performance Standards

Competence will be demonstrated:

- by successful completion of laboratory assignments/projects
- by multiple choice quizzes and practical exams

Criteria - Performance will be satisfactory when:

- learner exports an Access table to an HTML document and views the document
- learner imports a CSV file as an Access table
- learner uses the Table Analyzer
- learner imports and exports XML files
- learner saves and runs import and export specifications
- learner creates a multi-page form using a tab control
- learner embeds a chart in a form
- learner creates and modifies PivotTables and PivotCharts
- learner links data from an Excel worksheet

9. Use Action Queries and Advanced Table Relationships.

Learning objectives

What you will learn as you master the competency:

- a. Create an action query to create a table.
- b. Create action queries to append, delete, and update data.
- c. Define many-to-many and one-to-one relationships between tables.
- d. Learn about joining tables.
- e. Join a table using a self-join.
- f. View and create indexes for tables.

Performance Standards

Competence will be demonstrated:

- by successful completion of laboratory assignments/projects
- by multiple choice quizzes and practical exams

Criteria - Performance will be satisfactory when:

- learner creates an action query to create a table
- learner creates action queries to append, delete, and update data
- learner defines many-to-many and one-to-one relationships between tables
- learner learns about joining tables
- learner joins a table using a self-join
- learner views and creates indexes for tables

10. Automate tasks with macros.

Learning objectives

What you will learn as you master the competency:

- a. Design a switchboard and dialog box for a graphical user interface.
- b. Run and add actions to macros.
- c. Single step a macro.
- d. Create a macro.
- e. Add a macro to a macro group.
- f. Add a command button to a form.
- g. Attach a macro to a command button.
- h. Create a dialog box form.
- i. Add a list box to a form.
- j. Use an SQL statement to fill a list box with object names.
- k. Create a macro group.
- l. Use the Switchboard Manager to create a switchboard.
- m. Modify a switchboard.

Performance Standards

Competence will be demonstrated:

- by successful completion of laboratory assignments/projects
- by multiple choice quizzes and practical exams

Criteria - Performance will be satisfactory when:

- learner designs a switchboard and dialog box for graphical user interface
- learner runs and adds actions to macros
- learner single steps a macro
- learner creates a macro
- learner adds a macro to a macro group
- learner adds a command button to a form
- learner attaches a macro to a command button
- learner creates a dialog box form
- learner adds a list box to a form
- learner uses an SQL statement to fill a list box with object names
- learner creates a macro group
- learner uses the Switchboard Manager to create a switchboard

- o learner modifies a switchboard

11. Use and write Visual Basic for applications code.

Learning objectives

What you will learn as you master the competency:

- Recognize Function procedures (functions), Sub procedures (subroutines), and modules.
- Review and modify an existing subroutine in an event procedure.
- Create a function in a standard module.
- Create event procedures.
- Compile and test functions, subroutines, and event procedures.
- Hide text and change display colors.
- Create event procedures for a dialog box.

Performance Standards

Competence will be demonstrated:

- o by successful completion of laboratory assignments/projects
- o by multiple choice quizzes and practical exams

Criteria - Performance will be satisfactory when:

- o learner recognizes Function procedures (functions), Sub procedures (subroutines) and modules
- o learner reviews and modifies and existing subroutine in an event procedure
- o learner creates a function in a standard module
- o learner creates event procedures
- o learner compiles and tests functions, subroutines, and event procedures
- o learner hides text and changes display colors
- o learner creates event procedures for a dialog box

12. Manage and secure a database.

Learning objectives

What you will learn as you master the competency:

- Filter data in a table and a form.
- Save a filter as a query and apply the saved query as a filter.
- Create a subquery.
- Create a multi-valued field.
- Create an attachment field.
- Use an AutoNumber field.
- Save a database as a previous version.
- Analyze a database's performance.
- Link a database to a table in another database.
- Use the Linked Table Manager.
- Split a database.
- Encrypt a database with a password.
- Set database properties and startup options.

- n. Create an ACCDE file.

Performance Standards

Competence will be demonstrated:

- by successful completion of laboratory assignments/projects
- by multiple choice quizzes and practical exams

Criteria - Performance will be satisfactory when:

- learner filters data in a table and a form
- learner saves a filter as a query and applies the saved query as a filter
- learner creates a subquery
- learner creates a multi-valued field
- learner creates an attachment field
- learner uses an AutoNumber field
- learner saves a database as a previous version
- learner analyzes a database's performance
- learner links a database to a table in another database
- learner uses the Linked Table Manager
- learner splits a database
- learner encrypts a database with a password
- learner sets database properties and startup options
- learner creates an ACCDE file

Types of Instruction

Classroom presentation

On campus laboratory and clinicals

Grading Information

Grading Rationale

Grades will be weighted in the following way:

Assignments/Projects = 60%

Exams/Quizzes = 30%

Post-test/final = 10%

Grading Scale

- A 90%-100%
- B 80% to 89%
- C 70% to 79%
- D 60% to 69%
- Failing Below 60%