



BROWARD COLLEGE COURSE OUTLINE

LAST REVIEW: 2008 - 2009 **NEXT REVIEW:** 2013 - 2014 **STATUS:** A

COURSE TITLE: Access VBA Programming

COMMON COURSE NUMBER: CTS2403C

CREDIT HOURS: 3

CONTACT HOUR BREAKDOWN

(per 16 week term)

CLOCK HOURS:

Lecture: **48** Lab: **16**

Clinic: Other:

PREREQUISITE(S): COP 2171, CGS 1540C

COREQUISITE(S): None

PRE/COREQUISITE(S):

COURSE DESCRIPTION

This course provides students with the comprehensive knowledge and skills necessary to implement application programming concepts and procedures, and to apply these skills to design, develop, and implement solutions based on Access for Windows.

General Education Requirements – Associate of Arts Degree (AA), meets Area(s): Area
General Education Requirements – Associate in Science Degree (AS), meets Area(s): Area

Common Course Number: CTS2403C

UNIT TITLES

1. Working with Visual Basic for Applications
2. Database Design
3. Access SQL
4. Programming with Objects
5. Debugging and Error Handling
6. Working with Sets of Records
7. Working with Forms
8. OLE Automation
9. Custom Controls
10. Using Window DLLs
11. Database Replication
12. Security
13. Client/Server Application Development
14. Improving Database Performance
15. Distributing an Application
16. Extending Access

EVALUATION:

Upon successful completion of this course, the students should be able to create and debug spreadsheet applications, design logic, and test for accuracy.

UNITS

Unit 1 Working With Visual Basic for Applications

General Outcome:

1.0 The student shall: be able to utilize Visual Basic for applications.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 Utilize Visual Basic for applications loop statements.**
- 1.2 Given a scenario, use arithmetic, comparison, and pattern-matching operators.**
- 1.3 Create user-defined functions.**
- 1.4 Utilize common built-in functions.**
- 1.5 Declare variables in modules and procedures.**
- 1.6 Declare arrays, and initialize elements of arrays.**
- 1.7 Declare and use object variables and collections, and use their associated properties and methods.**
- 1.8 Declare symbolic constants, and make them available locally or publicly.**

Common Course Number: CTS2403C

Unit 2 Database Design

General Outcome:

2.0 The student shall: be able to utilize the basic concepts of database design.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

2.1 Apply basic concepts of normalization.

2.2 Utilize the cascade update and cascade delete options.

Common Course Number: CTS2403C

Unit 3 Access SQL

General Outcome:

3.0 The student shall: be able to utilize Access SQL and union queries.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

3.1 Utilize Access SQL to write common queries.

3.2 Refer to objects by using Access SQL.

3.3 Utilize union queries.

Common Course Number: CTS2403C

Unit 4 Programming With Objects

General Outcome:

- 4.0 The student shall: be able to implement program statements using access objects**

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 4.1** Given a scenario, determine when to use data access objects.
- 4.2** Differentiate between objects and collections.
- 4.3** Write statements that access and modify database objects
- 4.4** Utilize data access objects and Access objects.
- 4.5** Select appropriate methods and property settings for use with specified objects.

Common Course Number: CTS2403C

Unit 5 Debugging and Error Handling

General Outcome:

5.0 The student shall: be able to utilize debugging tools and write error handlers.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

5.1 Utilize the Errors collection and the Error object to trap errors.

5.2 Utilize debugging tools to suspend program execution, and to examine, step through, and reset execution of code.

5.3 Debug given code samples

5.4 Utilize the Debug window to monitor variable values.

5.5 Write an error handler.

Unit 6 Working With Sets of Records

General Outcome:

- 6.0 The student shall: be able to demonstrate an understanding of Query Def, workspace, and record set objects.**

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 6.1** Alter an Access SQL statement that is set for an existing Query Def object.
- 6.2** Implement transaction processing in a Workspace object.
- 6.3** Utilize record locking
- 6.4** Identify the different Record set object types.
- 6.5** Differentiate between dynaset-type Recordset objects and snapshot-type Recordset objects.
- 6.6** Manipulate data by using Recordset objects.
- 6.7** Create Recordset objects.
- 6.8** Write procedures that manipulate Recordset objects.

Unit 7 Working With Forms

General Outcome:

7.0 The student shall: be able to create forms and identify all the properties of a form

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to: create forms and identify all the properties of a form

7.1 Choose which form-specific and report-specific properties to set.

7.2 Choose which control properties to set.

7.3 Assign event-handling procedures to controls in a form.

7.4 Define and create form and report modules.

7.5 Given sample code, identify the scope of a form or report module

7.6 Open multiple instances of a form, and refer to them.

7.7 Use the Property Set and Property Let statements to assign values to form properties.

7.8 Use form methods

Common Course Number: CTS2403C

Unit 8 OLE Automation

General Outcome:

8.0 The student shall: be able to control applications using OLE automation.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

8.1 Control other applications by using OLE automation.

8.2 Control Access from other applications by using OLE automation

Common Course Number: CTS2403C0

Unit 9 Custom Controls

General Outcome:

9.0 The student shall: be able to develop custom controls

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

9.1 Set properties for custom controls.

9.2 Customize OLE controls.

Common Course Number: CTS2403C

Unit 10 Using Windows DLLs

General Outcome:

10.0 The student shall: be able to utilize Window functions.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

10.1 Properly declare Windows API functions.

10.2 Use the ByVal and ByRef keywords.

Unit 11 Database Replication

General Outcome:

11.0 The student shall: be able to explain the purpose of database replication and implement database replication using programming tools.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 11.1 Utilize Visual Basic for Applications, Access, Briefcase, or Replication Manager to make a database replicable.**
- 11.2 Utilize Replication Manager to view a synchronization schedule.**
- 11.3 Explain the purpose of the Replication ID.**
- 11.4 Explain how Replication manager resolves synchronization conflicts.**
- 11.5 Identify the advantages of using replication of synchronization**
- 11.6 Identify the changes that the Jet database engine makes when it converts a nonreplicable database into replicable database.**

Common Course Number: CTS2403C

Unit 12 Security

General Outcome:

12.0 The student shall: be able to analyze and implement security options.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

12.1 Analyze a scenario, and recommend an appropriate type of security.

12.2 Explain the steps for implementing security.

12.3 Analyze code to ensure that it sets security options.

12.4 Write code to implement security options.

Common Course Number: CTS2403C

Unit 13 Client/Server Application Development

General Outcome:

13.0 The student shall: be able to implement client/server applications.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

13.1 Given a scenario, decide whether to use SQL pass through queries or Access queries.

13.2 Access external data by using ODBC

13.3 Trap errors that are generated by the server.

13.4 Optimize connections

13.5 Optimize performance for a given client/server application

Common Course Number: CTS2403C

Unit 14 Improving Database Performance

General Outcome:

14.0 The student shall: optimize the performance of a database.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 14.1** Differentiate between single-field and multiple-field indexes.
- 14.2** Optimize queries by using Rushmore technology.
- 14.3** Restructure queries to allow faster execution.
- 14.4** Optimize performance in distributed applications.
- 14.5** Optimize performance for client/server applications.

Common Course Number: CTS2403C

Unit 15 Distributing an Application

General Outcome:

15.0 The student shall: be able to perform application distribution.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

15.1 Prepare an application for distribution by using the Setup Wizard.

15.2 Choose the best way to distribute a client/server application.

15.3 Distribute OLE custom controls with an application.

15.4 Provide online help in an Access application.

Common Course Number: CTS2403C

Unit 16 Extending Access

General Outcome:

16.0 The student shall: be able to test and debug databases.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

16.1 Implement error handling in add-ins.

16.2 Test and debug library databases

16.3 Describe the purpose of the USysRegInfo table.