SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

Sault College

COURSE OUTLINE

COURSE TITLE: Advanced Visual Basic

CODE NO. : CSD300   **SEMESTER:** Four

PROGRAM: Computer Programmer/Analyst

AUTHOR: Willem de Bruyne

DATE: Jan. 2007   **PREVIOUS OUTLINE DATED:** Jan. 2006

APPROVED:

_____   _____
DEAN   DATE

TOTAL CREDITS: 5

PREREQUISITE(S): CSD206, CSD204

HOURS/WEEK: 16 WKS   Total Credit Hours: 80

I. COURSE DESCRIPTION:

This course is an extension of the CSD206 Visual Basic introductory course that covered the basics of Visual Basic.NET programming. This course will cover debugging techniques, creating executable files, and distributing a Windows application. The students will then move into designing, creating and using a Class. The students will then be ready to access databases with ADO.NET, structure exception handling and printing. The course will conclude with creating web applications and writing data to a database.

The course focuses on hands-on, so there will be plenty of do-it-yourself features throughout the course.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Using Menus, Common Dialogs, Procedures, Functions, and Arrays

Potential Elements of the Performance:

- Add a menu bar and menus to an application using the MainMenu control
- Add a shortcut menu to an application using the ContextMenu control
- Use the StatusBar control in an application
- Use the PictureBox control
- Use common dialog boxes in an application to interact with the user
- Use one-dimensional and multidimensional arrays in code
- Write a function procedure to return a value
- Write sub procedures
- Write code to pass arguments to function and sub procedures
- Describe the two methods for passing arguments
- Create an enhanced message box
- Use a collection of controls to access properties and methods in code

2. Debugging, Creating Executable Files, and Distributing a Windows application

<u>**Potential Elements of the Performance:**</u>

- Describe the difference between syntax, logic, and run-time errors
- Find syntax errors during design time
- Find run-time errors and logic errors during run time
- Set breakpoints
- Use stepping
- Evaluate variables using DataTips
- Use Autos, Locals, and Me windows
- Use the Command window
- Create an executable file
- Create a setup program to distribute a Windows application

3. Designing, Creating and Using a Class

<u>**Potential Elements of the Performance:**</u>

- Understanding when to create a class when designing a solution
- Design a class using UML
- Create a new class in VB.NET
- Create a constructor for a class
- Create a property for a class
- Code a Get property procedure
- Code a Set property procedure
- Create a Method for a class
- Using a Class in a VB.NET program

4 Accessing Databases with ADO.NET, Handling Exceptions

<u>**Potential Elements of the Performance:**</u>

- Use the MonthCalendar control in an application
- Use the PrintDialog control
- Use the PrintDocument control
- Write code in a class
- Understand database connections
- Write code to connect to a database
- Understand how the CLR handles exceptions during run time
- Code a Try…Catch...Finally statement to handle exceptions

- Read records from a database
- Understand the role of SQL in interacting with a database
- Use simple SQL SELECT statements to query a database

5 Creating Web Applications and Writing Data to a Database

Potential Elements of the Performance:

- Declare a public procedure in a module
- Use optional parameters in a procedure
- Use SQL SELECT statements to read individual records from a database
- Start a new ASP.NET Web application
- Understanding Web applications and Web forms
- Explain when to use HTML controls and Web controls in a Web application
- Use table and Horizontal Rule HTML controls on a Web form
- View HTML code for a Web form
- Use Label, TextBox, and Button Web controls on a Web form
- Test a Web application
- Understand how ASP.NET, the CLR, and Microsoft Internet Information Services interact to run a Web application

6 Creating Console Applications, Understanding XML and Creating Web Services

Potential Elements of the Performance:

- Start new console application
- Use parameters in a console application
- Write code to create a comma-delimited text file
- Write code to create a tab-delimited text file
- Write code to create an XML file
- Start a new ASP.NET web service application
- Understand the structure of XML files
- Write code to read an XML file
- Use web services in code

7. ADO.NET Databases

Potential Elements of the Performance:

- Data Sources and Connections
- DataSets

- Using Data-Bound Controls
- Navigating, Adding, and Removing Rows
- Writing Code for DataTables
- Use the Query Builder
- Filling Lists and Combo Boxes
- Adding Expressions to Datasets
- Parameterized Queries

8.   **DataGrid, DataView, and ListView**

      Potential Elements of the Performance:

- DataGrid Control
- Table Styles and Column Styles
- DataGrid Events
- Updating a DataGrid
- DataViews and ListViews
- Using a DataView Control
- Filling a ListView Control
- Command Objects
- Inserting Table Rows
- Updating Table Rows
- Deleting Table Rows

III.   **TOPICS:**

- Debugging, Creating Executable Files, and Distributing a Windows application
- Using Menus, Common Dialogs, Procedures, Functions, and Arrays
- Accessing Databases with ADO.NET, Handling Exceptions
- Designing, Creating and Using a Class
- Creating Web Applications and Writing Data to a Database
- Creating Console Applications, Understanding XML and Creating Web Services
- ADO.NET Databases
- DataGrid, DataView, and ListView

IV.   REQUIRED RESOURCES/TEXTS/MATERIALS:

MICROSOFT Visual Basic .NET Comprehensive Concepts and
Techniques   *Authors: Shelly, Cashman, Quasney*

Advanced Visual Basic .NET 3rd Ed.
Authors: Irvine, Liang, Gaddis

Instructor Handouts/e-mail attachments/web sites

V.   EVALUATION PROCESS/GRADING SYSTEM:

The following semester grades will be assigned to students in
postsecondary courses:

Quizzes 3   **@ 20%**
Attendance & Part.   **@ 10%**
Assign   3   **@ 10%**
                         100%

Grade	Definition	Grade Point Equivalent
A+	90 – 100%	4.00
A	80 – 89%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00

CR (Credit)   Credit for diploma requirements has been
              awarded.
S   Satisfactory achievement in field /clinical
              placement or non-graded subject area.
U   Unsatisfactory achievement in
              field/clinical placement or non-graded
              subject area.
X   A temporary grade limited to situations
              with extenuating circumstances giving a
              student additional time to complete the
              requirements for a course.
NR   Grade not reported to Registrar's office.
W   Student has withdrawn from the course
              without academic penalty.

VI.　SPECIAL NOTES:

Special Needs:
If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493 so that support services can be arranged for you.

Retention of course outlines:
It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:
Students should refer to the definition of "academic dishonesty" in *Student Rights and Responsibilities*. Students who engage in "academic dishonesty" will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course outline amendments:
The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

♦　Students will receive a grade of zero for late assignments, or missed tests unless prior permission is granted from the instructor.
♦　**You must attain a minimum of 60% on your quizzes in order to receive a passing grade in this course**.
♦　Students are expected to attend classes on a regular bases, and treat their peers and instructors in a business like manner.

VII.　PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII.   DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.