SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE:	Visual Basic - Prototyping		
CODE NO. :	CSD301	**SEMESTER:**	**5**
PROGRAM:	Computer Programmer/Analyst		
AUTHOR:	Willem de Bruyne		
DATE:	07/07/04	**PREVIOUS OUTLINE DATED:**	07/07/03
APPROVED:			
	_____ **DEAN**		_____ **DATE**
TOTAL CREDITS:	FIVE		
PREREQUISITE(S):	CSD300		
HOURS/WEEK:	FOUR		

Visual Basic - Prototyping | CSD301

COURSE NAME | COURSE NUMBER

I. COURSE DESCRIPTION:

This course is an extension of the CSD206 and CSD300 Visual Basic courses. All learning styles will be addressed by having the students learn by using manuals; lectures; small group work; online referencing, step-by-step exercises, as well as the development of a real life computer system.

The development of the computer system will place the students in a project team and complete the analysis, design, development and the implementation of a computer based system using Visual Basic, Crystal Reports and a database tool to handle file management. The nature of the projects are real, therefore, there is a Community Value Added component of the course. The instructor will secure a project that will involve a non-profit organization or a small business within Sault Ste. Marie. The students must work closely with the business acting as the primary end -users.

The students have gained a solid background in data base design, programming, and systems analysis and design, as well as working in small teams to complete project work. This course will bring all of these curriculum components together and challenge the students with real life projects that will prepare them for their computer profession. The delivery of the system will be completed in the sixth semester during the CSD310 course.

The lecture components of the course will focus on the ADO.Net object model and use that model in developing the data-bound Windows Forms and Web Forms.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Major Project

Potential Elements of the Performance:

- Create Service Request
- Develop the problem statement
- Establish priorities
- Establish a method to study the present system
- Organize the products of the study
- Review existing procedures
- Observing current operations
- Perform interviews and walkthroughs
- Create data flow diagrams
- Define the prototype
- Build prototyped reports, screens, functions, controls and any interfaces.
- Define the database structure and contents, from table definitions and keys identified, to attributes.
- Ensure data normalization
- Describe types of data validation and verification techniques
- Identify different reporting types
- Identify output formats
- Create the required windows interfaces.
- Design any required coding techniques, code each object and any functions and modules.
- Develop and enter test data
- Establish version controls
- Establish documentation procedures, and creation of user guide
- Identify the hardware the system will eventually reside on.
- Monitor team member progress.
- Establish milestones and monitor progress.
- Train end users
- Establish a conversion process.
- Ensure operating acceptance
- Establish responsibilities for making revisions.
- Establish backup procedures.

2. Getting Started with ADO.NET

Potential Elements of the Performance:

- Identify the primary objects that make up Microsoft ADO.NET and how they interact
- Create Connection and DataAdapter objects by using the DataAdapter Configuration wizard
- Automatically generate a DataSet
- Bind control properties to a DataSet
- Load data into a DataSet at run time

3. Creating Connections

Potential Elements of the Performance:

- Add an instance of a Server Explorer Connection to a form
- Create a connection using code
- Use Connection properties
- Use an intermediate variable to reference multiple types of connections
- Bind Connection properties to Form Controls
- Open and Close Conections
- Respond to a Connection.StateChange event

4. Data Commands and the DataReader

Potential Elements of the Performance:

- Add a Data Command to a form
- Create a Data Command at run time
- Set Command properties at run time
- Configure the Parameters collection in VB.NET
- Add and configure Parameters at run time
- Set Parameter values
- Execute a Command
- Create a DataReader to return Command results

5. The DataAdapter

Potential Elements of the Performance:

- Create a DataAdapter
- Preview the results of a DataAdapter
- Set a DataAdapter's properties
- Use the Table Mappings dialog box
- Use he DataAdapter's methods
- Respond to DataAdapter events

6. Transaction Processing in ADO.NET

Potential Elements of the Performance:

- Create a Transaction
- Create a Nested Transaction
- Commit a Transaction
- Rollback a Transaction

7. The DataSet

Potential Elements of the Performance:

- Create Typed and Untyped DataSets
- Add DataTables to DataSets
- Add DataRelations to DataSets
- Clone and copy DataSets

8. The DataTable

Potential Elements of the Performance:

- Create an independent DataTable at run time
- Add a DataTable to an existing DataSet
- Add a PrimaryKey constraint by using the FillSchema method
- Create a calculated column in a DataTable
- Add a new row to the Rows collection
- Display the RowState of a DataRow
- Add a ForeignKey constraint to a DataTable
- Add a UniqueConstraint to a DataTable
- Display a subset of rows within a DataTable
- Retrieve data related to the current DataRow

9. The DataView

Potential Elements of the Performance:

- Add a Dataview to a form
- Create a DataView at run time
- Create calculated columns in a DataView
- Sort DataView rows
- Filter DataView rows
- Search a DataView based on a primary key value

10. Editing and Updating Data

Potential Elements of the Performance:

- Use the RowState property of a DataRow
- Retrieve a specific version of a DataRow
- Add a row to a DataTable
- Delete a row from a DataTable
- Edit a DataRow
- Accept and reject changes to data

11. ADO.NET data-Binding in Windows Forms

Potential Elements of the Performance:

- Simple-bind control properties using the Properties window
- Simple-bind control properties using the Advanced Bining dialog box
- Simple-bind control properties at run time
- Complex-bind control properties using the Properties window
- Use CurrencyManager properties
- Use the Binding object's properties

12. Using ADO.NET in Windows Forms

Potential Elements of the Performance:

- Format data using the Format and Parse events
- Use specialized controls to simply data entry
- Use data relations to display related data
- Find rows based on Sort criteria
- Work with data change events and validation events
- Use the ErrorProvider component

13. Data-Binding in Web Forms

Potential Elements of the Performance:

- Simple-bind controls at design time
- Simple-bind controls at run time
- Display bound data on a page
- Display bound data on a page
- Complex-bind controls at design time
- Complex-bind controls at run time
- Use the DataBinder object
- Store a DataSet in the session state and ViewState
- Update a data source using a Command object

14. Using ADO.NET in Web Forms

Potential Elements of the Performance:

- Display data in DataGrid control
- Implement sorting in a DataGrid control
- Display data in a DataList control
- Implement paging in a DataGrid control
- Implement manual navigation in a Web form
- Use validation controls to control user entry

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Microsoft ADO.NET Step by Step, by Rebecca Riordan
Instructor Handouts

V. EVALUATION PROCESS/GRADING SYSTEM

The mark for this course will be arrived at as follows:

Project	50%
Tests 1 @	25%
Assignments	20%
Participation	5%
	100%

The following semester grades will be assigned to students:

Grade Point

Grade	VI. Definition	*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 professor and/or the Special Needs office. Visit Room E1101 or call Extension 703 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.

Attendance; even though it is expected groups will meet and work on the project during the evenings and weekends, if you are absent during class time, you are deemed to not be a participant during that time.

- Students will receive a grade of zero for late assignments unless prior permission is granted from the instructor.
- Students are expected to attend classes on a regular bases and treat their peers and instructors in a business like manner.
- Students are expected to inform the instructor via phone or e-mail if they are unable to attend class, 2% penalty for each infraction.
- Students missing a test will receive a grade of zero unless prior permission is granted from the instructor.