SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

Sault College

COURSE OUTLINE

COURSE TITLE: **.NET Framework**

CODE NO. : **CSD321** **SEMESTER:** **Six**

PROGRAM: **Computer Programmer/Analyst**

AUTHOR: **Willem de Bruyne**

DATE: **January 2005** **PREVIOUS OUTLINE DATED:** **January 2004**

APPROVED:

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DEAN **DATE**

TOTAL CREDITS: **Five**

PREREQUISITE(S): **CSD301**

HOURS/WEEK: **Four Hours per week**

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I. COURSE DESCRIPTION:

The course is designed to have the students examine the .NET technology that allows almost any type of application to run in a common environment known as the .NET Framework. Students will look at the rich set of classes and methods while develop applications**.** 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 storage. 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.

This year the project will be developed for the Aviation Department at Sault College and an Arrest Docket for the Sault Police Service.

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.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Major Term 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
- Ensure operating acceptance
- Establish responsibilities for making revisions.
- Establish backup procedures.

2. Crystal Reports

Potential Elements of the Performance:

- Report Design Concepts
- Introduction to reportingrecord selection
- Sorting and grouping
- Running totals
- Multi section reports
- Formatting
- Charting
- Mapping
- OLE
- Cross tab
- Using formulas
- Parameter fields
- The Crystal SQL Designer

3. Transaction Processing in ADO.NET

Potential Elements of the Performance:

- Create a transaction
- Create a nested transaction
- Commit a transaction

4. The DataSet

Potential Elements of the Performance:

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

5. 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

6. 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

7. Editing and Updating Data

Potential Elements of the Performance:

- Use RowState property of a dataRow
- Retrieve a specific version of a DataRow
- Add a row to a DataTable
- Delete a row from the DataTable
- Edit a DataRow
- Temp. suspend enforcement of constraints during updates
- Accept changes to data
- Reject changes to data

8. 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 dialog box
- Simple-bind control properties at run-time
- Complex-bind control properties using Properties window
- Complex-bind control properties at run time
- Use CurrencyManager properties
- Respond to CurrencyManager events
- Use the Binding object's properties

9. 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 a DataSet's Sort column
- Find rows based on other criteria
- Work with data change events
- Work with validation events
- Use the ErrorProvider component

10. 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
- Complex-bind controls at design time
- Complex-bind controls at run time

- Use the DataBinder Object
- Store a DataSet in the session state
- Store a DataSet in the ViewState
- Update a data source using a Command object

11. Using ADO.NET in Web Forms

Potential Elements of the Performance:

- Display data in a DataGrid control
- Implement sorting in a DataGrid control
- Display data in a DataList control
- Display a DataList control as flowed text
- Implement paging in a DataGrid control
- Use validation controls to control user entry

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

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

Instructor Handouts and notes

V. EVALUATION PROCESS/GRADING SYSTEM:

The following semester grades will be assigned to students:

Final Test	**@ 30%**
Work Ethic/Participation	**@ 10%**
Major Project	**@ 60%**
	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 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.

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

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.