

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: Introduction to Visual Basic
CODE NO. : CSD206 **SEMESTER: 3**
PROGRAM: Computer Programming
AUTHOR: Willem de Bruyne
DATE: 07/07/07 **PREVIOUS OUTLINE DATED:** 07/07/06
APPROVED:

DEAN **DATE**
TOTAL CREDITS: FIVE
PREREQUISITE(S): CSA101
HOURS/WEEK: FOUR

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I. COURSE DESCRIPTION:

Visual Basic is relatively easy to use, and it doesn't take too long before you can write your own programs. This course will give an overview of the tools Visual Basic has to offer, some guidance about ways to create, save and modify Visual Basic projects.

The features of the language are covered, and the programming environment. We will be using Microsoft's .NET Framework as the integrated development environment. It will be this new development environment that will be challenging and yet very exciting, as we move into Microsoft's new technology. Later in the course you will be ready to create a complete Visual Basic application. In doing so, we will cover setting property values of objects, writing code, testing programs, saving/opening/modifying existing projects, as well as printing form images, object properties, and program instructions.

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. An Introduction to Visual Basic .NET and Program Design

Potential Elements of the Performance:

- Describe Visual Basic .NET
- Describe the VB programming language
- Identify each of the phases in the development cycle
- Describe programs, programming, applications, and program development
- Define an algorithm
- Define objects, attributes, and methods
- Explain object-oriented programming and design
- Describe rapid application development
- Identify the key components of .NET

2. The Visual Basic .NET Integrated Development Environment

Potential Elements of the Performance:

- Start VB .NET
- Customize the VB .NET integrated development environment
- Open a VB .NET project
- Describe the basic components of the VB .NET integrated development environment
- Run a VB .NET project
- Set a property on a control
- Navigate the code window
- Modify code in an existing project
- Save a VB .NET project
- Print a VB .NET project's forms and code
- Use VB .NET project help

3. Building an Application in the Visual Basic .NET Environment

Potential Elements of the Performance:

- Design a VB .NET application
- Start a new VB .NET project
- Change the size of a form
- Change the property values of a form
- Add controls to a form
- Move and resize controls
- Use the Label, TextBox, NumericUpDown, and Button controls
- Change the property values of controls
- Change the Name property to rename a control
- Write the code for the Click event procedure
- Display line numbers in the code window
- Use control properties in a method
- Document code with a comment header and comment statements

4. Working with Variables, Constants, Data Types and Expressions

Potential Elements of the Performance:

- Use the RadioButtons and GroupBox controls
- Use the Layout toolbar to size and align controls
- Set a default button on a form
- Lock controls on a form
- Declare variables and constants

- Use variables and constants within code
- Describe VB .NET data types
- Convert between data types
- Code a form Load event procedure
- Use the Option Strict statement
- Use arithmetic expressions
- Describe the order of operation in code
- Use the Pmt function
- Use the Format\$ function

5. Decision Making

Potential Elements of the Performance:

- Use the ComboBox control
- Code an If..Then...Else statement
- Code a nested If..Then...Else statement
- Code a Select Case statement
- Validate user input
- Use the MessageBox class
- Use string concatenation in code
- Use relational operators in code
- Use logical operators in code

6. Repetition and Multiple Forms

Potential Elements of the Performance:

- Add additional forms to a project
- Change the default icon on the title bar of a form
- Use the ListView controls to display a list of items on a form
- Use the CheckBox controls
- Use the Anchor property
- Work with Collections in code
- Code a variety of looping structures
- Code a concatenation operator
- Code a keyboard event
- Code a form Resize event procedure
- Work with multiple code windows
- Specify a Startup object for a project

7. 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

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

Potential Elements of the Performance:

- 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

III. TOPICS:

1. An Introduction to Visual Basic .NET and Program Design
2. The Visual Basic .NET Integrated Development Environment
3. Building an Application in the Visual Basic .NET Environment
4. Working with Variables, Constants, Data Types and Expressions
5. Decision Making
6. Repetition and Multiple Forms
7. Using Menus, Common Dialogs, Procedures, Functions, and Arrays
8. Debugging, Creating Executable Files, and Distributing a Windows application

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

MICROSOFT Visual Basic .NET Comprehensive Concepts and Techniques

Authors: Shelly, Cashman, Quasney

V. EVALUATION PROCESS/GRADING SYSTEM:

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

Quizzes 4 @ 15%
 Assign 3 @ 12%
 Participation 4%
 100%

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
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.

The professor reserves the right to adjust the mark up or down 5% based on attendance, participation, leadership, creativity and whether there is an improving trend.

A minimum of **80% attendance** required in the labs and lectures.

- Students must complete and pass both the test and assignment portion of the course in order to pass the entire course.
- All Assignments must be completed satisfactorily to complete the course.
- Late hand in penalties will be 5% per day. Assignments will not be accepted past one week late unless there are extenuating and legitimate circumstances.
- Makeup Tests are at the discretion of the instructor and will be assigned a maximum grade of 50%.
- The professor reserves the right to adjust the number of tests, practical tests and quizzes based on unforeseen circumstances. The students will be given sufficient notice to any changes and the reasons thereof.
- A student who is absent for 3 or more times without any valid reason or effort to resolve the problem will result in action taken.

NOTE: If action is to be taken, it will range from marks being deducted to a maximum of removal from the course.

Eligibility for X Grades/Upgrading of Incompletes When a student's course work is incomplete or final grade is below 50%, there is the possibility of upgrading to a pass when a student meets all of the following criteria: The student's attendance has been satisfactory. An overall average of at least 50% has been achieved. The student has not had a failing grade in all of the theory tests taken. The student has made reasonable efforts to participate in class and complete assignments.

Note: The opportunity for an X grade is usually reserved for those with extenuating circumstances. The nature of the upgrading requirements will be determined by the instructor and may involve one or more of the following: completion of existing labs and assignments, completion of additional assignments, re-testing on individual parts of the course or a comprehensive test on the entire course.

Labs:

Lab activities represent a very important component of this course in which practical 'hands-on' skills will be developed. Because of this, attendance is mandatory and the satisfactory completion of all lab activities is required. Evaluation of lab work in-class will be done. It is the student's responsibility to discuss absences from regularly scheduled labs with the instructor so that alternate arrangements (where possible) can be made to complete the lab requirements.

Attendance:

Attendance is mandatory. Absenteeism will affect a student's ability to succeed in this course. Absences due to medical or other unavoidable circumstances should be discussed with the instructor, so that remedial activities can be scheduled. Absenteeism for tests can only be allowed for medical reasons and should be authorized ahead of time. Unauthorized absences could result in a zero grade being assigned.

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 2493 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.

Communication:

The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

The professor reserves the right to use other tools and / or techniques that may be more applicable. These other tools and / or techniques for effective communication will be discussed, identified and presented throughout the delivery of the course content.

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.