



**Cowley College
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**VISUAL BASIC PROGRAMMING
CIS1858 3 Credit Hours**

Student Level:

This course is open to students on the college level in either freshman or sophomore year.

Catalog Description of the Course:

CIS1858 - VISUAL BASIC PROGRAMMING (3 hrs)

An introductory course to give computer science majors an introduction to programming in Visual Basic .NET. Windows programs will be created using a structured programming approach. Various problems will be solved using Visual Basic.

Prerequisite:

None

Controlling Purpose:

This course is offered to teach programming skills in Visual Basic .NET to students. The basic constructs learned in this course will apply to any programming language (with slight modifications).

Learner Outcomes:

Upon completion of this course, the student should be able to write Windows programs using Visual Basic .NET. The student should be able to use input/output statements, dialog boxes, selection statements, repetition structures, procedures, and arrays. The student will learn how to incorporate exception handling into their programs. They will also using the following windows components: buttons, labels, lists, textboxes, panels, menus, tabbed windows, ListView, TreeView, LinkLabel, ListBoxes, ComboBoxes and miscellaneous components. Lastly, they will know how to write to and retrieve data from various sources.

Units Outcomes and Criterion Based Evaluation Key for Core Content:

The following defines the minimum core content not including the final examination period. Instructors may add other content as time allows.

Evaluation Key:

- A = All major and minor goals have been achieved and the achievement level is considerably above the minimum required for doing more advanced work in the same field.
- B = All major goals have been achieved, but the student has failed to achieve some of the less important goals. However, the student has progressed to the point where the goals of work at the next level can be easily achieved.

- C = All major goals have been achieved, but many of the minor goals have not been achieved. In this grade range, the minimum level of proficiency represents a person who has achieved the major goals to the minimum amount of preparation necessary for taking more advanced work in the same field, but without any major handicap of inadequacy in his background.
- D = A few of the major goals have been achieved, but the student's achievement is so limited that he is not well prepared to work at a more advanced level in the same field.
- F = Failing, will be computed in GPA and hours attempted.
- N = No instruction or training in this area.

CHAPTER 1: Introduction to Computers, Internet and Visual Basic .NET						
Outcomes: Upon completion of this unit, the student will understand what computers are, how they work and how they are programmed. Also the student will understand the evolution of the Internet and will get an overview of programming languages, specifically Visual Basic .NET.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Understand basic computer concepts.
						Learn about various programming languages.
						Appreciate the importance of object technology.
						Become familiar with the history of the Visual Basic .NET programming language.
						Learn about the evolution of the Internet and World Wide Web.
						Understand the Microsoft .NET initiative.

CHAPTER 2: Introduction to the Visual Studio .NET IDE						
Outcomes: Upon completion of this unit, the student will have a working knowledge of the Visual Studio .NET IDE and be able to write, compile, and execute a simple Visual Basic program.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Be Introduced to the Visual Studio .NET Integrated Development Environment (IDE).
						Become familiar with the types of commands contained in the IDE's menus and toolbars.
						Understand the use of various kinds of windows in the Visual Studio .NET IDE.

CHAPTER 2: Introduction to the Visual Studio .NET IDE

Outcomes: Upon completion of this unit, the student will have a working knowledge of the Visual Studio .NET IDE and be able to write, compile, and execute a simple Visual Basic program.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Understand Visual Studio .NET's help features.
						Be able to create, compile, and execute a simple Visual Basic program.

CHAPTER 3: Introduction to Visual Basic Programming

Outcomes: Upon completion of this unit, the student will be able to write programs that use input/output statements, arithmetic operators, equality/relational operators, decision-making statements and simple dialog boxes.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Be able to write simple Visual Basic programs.
						Be able to use input and output statements.
						Become familiar with data types.
						Understand basic memory concepts
						Be able to use arithmetic operators.
						Understand the precedence of arithmetic operators.
						Be able to write decision-making statements.
						Be able to use equality and relational operators.
						Be able to use dialogs to display messages.

CHAPTER 4: Control Structures: Part 1

Outcomes: Upon completion of this unit, the student will be able to write programs that use the If/Then, If/Then/Else, While, Do While/Loop, and Do Until/Loop structures.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Understand basic problem-solving techniques.
						Develop algorithms through the process of top-down, stepwise refinement.
						Use the If/Then and If/Then/Else selection structures to choose among alternative actions.
						Use the While, Do While/Loop and Do Until/Loop repetition structures to execute statements in a program repeatedly.
						Understand counter-controlled repetition and sentinel-controlled repetition.
						Use the assignment operators.
						Create basic Windows applications.

CHAPTER 5: Control Structures: Part 2

Outcomes: Upon completion of this unit, the student will be able to write programs that use the For/Next, Do/Loop While, Do/Loop, and Select Case structures. The student will also understand how to use the modular approach to programming using procedures.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Be able to use the For/Next, Do/Loop While and Do/Loop Until repetition structures to execute statements in a program repeatedly.
						Understand multiple selection using the Select Case selection structure.
						Be able to use the Exit Do and Exit For program control statements.
						Be able to use logical operators.
						Be able to form more complex conditions.

CHAPTER 6: Procedures

Outcomes: Upon completion of this unit, the student will be able to write programs that use procedures to contain code. The student will understand the purpose and benefits of modular programming.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Construct programs modularly from pieces called procedures.
						Introduce the common Math methods available in the Framework Class Library.
						Create New Procedures.
						Understand the mechanisms used to pass information between procedures.
						Introduce simulation techniques that employ random-number generation.
						Understand how the visibility of identifiers is limited to specific regions of programs.
						Understand how to write and use recursive procedures (procedures that call themselves).

CHAPTER 7: Arrays

Outcomes: Upon completion of this unit, the student will be able to write programs that use arrays.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Introduce the array data structure.
						Understand how arrays store, sort and search lists and tables of values.
						Understand how to declare an array, initialize an array and refer to individual elements of an array.
						Be able to pass arrays to methods.
						Understand basic sorting techniques.
						Be able to declare and manipulate multidimensional arrays.

CHAPTER 11: Exception Handling

Outcomes: Upon completion of this unit, the student will be able to incorporate error checking into their programs.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Understand exceptions and error handling.
						Be able to use Try blocks to delimit code in which exceptions might occur.
						Be able to Throw exceptions.
						Use Catch blocks to specify exception handlers.
						User the Finally block to release resources.
						Understand the Visual Basic exception class hierarchy.
						Create programmer-defined exceptions.

CHAPTER 12: Graphical User Interface Concepts: Part 1

Outcomes: Upon completion of this unit, the student will be able to incorporate the graphical controls: buttons, labels, lists, textboxes, and panels into their programs. The student also will get an introduction to events.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Understand the design principles of graphical user interfaces.
						Be able to use events.
						Understand namespaces that contain graphical user interface components and event-handling classes.
						Be able to create graphical user interfaces.
						Be able to create and manipulate buttons, labels, lists, textboxes, and panels.
						Be able to use mouse and keyboard events.

CHAPTER 13: Graphical User Interface Concepts: Part 2

Outcomes: Upon completion of this unit, the student will be able to incorporate the graphical controls: menus, tabbed windows, ListView, TreeView, LinkLabel, Listboxes, and Comboboxes into their programs. Also the student will know how to create a multiple-document-interface program.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Be able to create menus, tabbed windows and multiple-document-interface (MDI) programs.
						Understand the use of the ListView and TreeView controls for displaying information.
						Be able to create hyperlinks using the LinkLabel control.
						Be able to display lists of information in ListBoxes and ComboBoxes.
						Create custom controls.

CHAPTER 15: Strings, Characters and Regular Expressions

Outcomes: Upon completion of this unit, the student will be able to manipulate string/character objects and understand how to use regular expressions.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Be able to create and manipulate nonmodifiable character string objects of class String.
						Be able to create and manipulate modifiable character string objects of class StringBuilder.
						Be able to use regular expressions in conjunction with classes Regex and Match.

CHAPTER 17: Files and Streams

Outcomes: Upon completion of this unit, the student will be able to work with files and directory structures.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Be able to create, read, write, and update files.
						Understand the Visual Basic streams class hierarchy.
						Be able to use classes File and Directory.
						Be able to use the FileStream and BinaryFormatter classes to read objects from, and write objects to, files.

CHAPTER 17: Files and Streams						
Outcomes: Upon completion of this unit, the student will be able to work with files and directory structures.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Become familiar with sequential-access and random-access file processing.

CHAPTER 19: Database, SQL and ADO.NET						
Outcomes: Upon completion of this unit, the student will be able to access relational databases.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Understand the relational database model.
						Understand basic database queries written in Structured Query Language (SQL).
						Use the classes and interfaces of namespace System.Data to manipulate databases.
						Understand and use ADO.NET's disconnected model.
						Use the classes and interfaces of namespace System.Data.OleDb.

Projects Required:

Projects will vary according to the instructor.

Text Book:

Contact the bookstore for current textbook.

Materials/Equipment Required:

Traditional Classroom Delivery: None. Although installing Visual Studio .NET 2003 at home will aid in doing the coursework.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy

Course Timeframe:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability which may impact work in this class which requires accommodations, contact the Disability Services Coordinator.