**Course Information**

**Division**
Business

**Course Number**
CMP 121

**Title**
Visual Basic Programming I

**Credits**
3

**Developed by**
Lydia Mata

**Lecture/Lab Ratio**
2 Lecture/2 Lab

<table>
<thead>
<tr>
<th>ASU</th>
<th>NAU</th>
<th>UA</th>
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<tr>
<td>CSE 181, CIS 220, Computer/Stats (CS)</td>
<td>Elective Credit</td>
<td>CSC Departmental Elective</td>
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**Activity Course**
No

**CIP Code**
11.0100

**Assessment Mode**
Pre/Post Test (75 Questions/75 Points)

**Semester Taught**
Fall

**GE Category**
AAS Degree Only

**Separate Lab**
No

**Awareness Course**
No

**Intensive Writing Course**
No

**Prerequisites**
None

**Educational Value**

This course is targeted toward two- and four-year computer majors as well as community students interested in using Visual Basic programming language to support application software.

**Description**

A comprehensive introduction to event-driven, object-oriented computer programming using the Visual Basic programming language. Students learn to write problem-solving programs and develop a wide variety of Windows applications in a graphical environment. The course uses Visual Basic to illustrate good programming practices, application development techniques, and overall visual design.

**Supplies**

USB flash drive
Competencies and Performance Standards

1. Examine the terminology and concepts of event-driven, object-oriented programming languages.

Learning objectives
What you will learn as you master the competency:

a. Recognize standard Visual Basic programming terminology.

b. Relate event-driven, object-oriented programming techniques to Visual Basic programming language.

Performance Standards

Competence will be demonstrated:

- by successful completion of a multiple choice quiz

Criteria—Performance will be satisfactory when:

- learner recognizes standard Visual Basic programming terminology
- learner relates event-driven, object-oriented programming techniques to Visual Basic programming language

2. Create simple Visual Basic applications.

Learning objectives
What you will learn as you master the competency:

a. Start and customize the Visual Basic programming environment.

b. Open, save, close, and create new solutions.

c. Set and restore object properties.

d. Add various types of controls to forms.

Performance Standards

Competence will be demonstrated:

- by successful completion of chapter tutorials and quizzes
- by successful completion of chapter projects
- by successful completion of final exam

Criteria—Performance will be satisfactory when:

- learner starts and customizes the Visual Basic programming environment
- learner opens, saves, closes, and creates new solutions
- learner sets and restores object properties
- learner adds various types of controls to forms
- learner prints existing code

3. Design a simple application using Visual Basic Programming Language.

Learning objectives
What you will learn as you master the competency:

a. Complete a flow chart.

b. Describe Windows layout and labeling standards.

c. Build standard interface features like access keys, tab order, locked controls, and borders styles.

d. Write and code simple assignment statements, arithmetic expressions, and methods.
Performance Standards

Competence will be demonstrated:
- by successful completion of chapter tutorials and projects
- by successful completion of chapter projects
- by successful completion of final exam

Criteria—Performance will be satisfactory when:
- learner completes flow chart
- learner describes common Windows layout and labeling standards
- learner builds standard interface features like access keys, locked controls, and borders
- learner writes and codes simple assignment statements, arithmetic expressions, and methods

4. Learn to use variables and constants in Visual Basic applications.

Learning objectives

What you will learn as you master the competency:

a. Define Visual Basic variables and constants.
b. Describe various primitive data types.
c. Describe the scope and lifetime of a variable.
d. Declare, assign, and initialize Visual Basic variables.
e. Declare, assign, and initialize Class-Level variables.
f. Retrieve user input for use in initializing variables.
g. Designate default buttons.
h. Concatenate strings.
i. Create procedures that handle more than one event.

Performance Standards

Competence will be demonstrated:
- by successful completion of chapter tutorial and quizzes
- by successful completion of chapter projects
- by successful completion of final exam

Criteria—Performance will be satisfactory when:
- learner defines Visual Basic variables and constants
- learner describes various primitive data types
- learner demonstrates the scope and lifetime of a variable
- learner declares, assigns, and initializes Visual Basic variables
- learner declares, assigns, and initializes Class-Level variables
- learner retrieves user input from form and uses the value to initialize variables
- learner designates default buttons
- learner concatenates strings
- learner creates procedures that handle more than one event
5. Write selection structures in Visual Basic code.

Learning objectives

What you will learn as you master the competency:

a. Code If...Then...Else and If...Then...ElseIf statements in Visual Basic programming language.

b. Code loop statements in Visual Basic programming language, including Do While, Do Until, and For...Next loops.

c. Demonstrate the use of comparison and logical operators.

d. Format numbers.

e. Use MessageBox methods and group controls.

f. Handle Exceptions.

g. Code nested selection structures and case structures.

Performance Standards

Competence will be demonstrated:

- by successful completion of chapter tutorials and quizzes
- by successful completion of chapter projects
- by successful completion of final exam

Criteria—Performance will be satisfactory when:

- learner codes If...Then...Else statements in Visual Basic programming language
- learner codes Do While, Do Until, and For...Next loops in Visual Basic programming language
- learner demonstrates the use of comparison and logical operators
- learner formats numbers and changes case
- learner creates MessageBox methods and group controls
- learner handles Exceptions
- learner codes nested selection structures and case structures

6. Write procedures and functions.

Learning objectives

What you will learn as you master the competency:


b. Pass arguments to and from procedures.


Performance Standards

Competence will be demonstrated:

- by successful completion of chapter tutorials and quizzes
- by successful completion of chapter projects
- by successful completion of final exam

Criteria—Performance will be satisfactory when:

- learner codes procedures in Visual Basic programming language
- learner passes arguments to and from various procedures
- learner codes functions in Visual Basic programming language
Types of Instruction
Classroom presentation
On-campus laboratory

Grading Information

Grading Rationale
The post-test will count as the final exam and be represented as 10% of the overall grade.

Grading Scale
A  90-100%
B  80-89%
C  70-79%
D  60-69%
F  Below 60%