San Bernardino Valley College
Curriculum Approved: January 24, 2005

I. CATALOG DESCRIPTION:

Department Information:
Division: Science and Math
Department: Computer Science
Course ID: CS 120
Course Title: Introduction to Visual Basic.NET
Units: 4
Lecture Hours: 3
Laboratory Hours: 3
Prerequisite: None

Catalog and Schedule Description: An introduction to a Web-based programming language, Visual Basic.NET as it applies to scientific, business and manufacturing settings. Topics include problem solving, graphical user interface, program design, software tools, structured logic, object-oriented programming, graphics and animation, procedures, arrays, files, and Web projects.

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: One

III. EXPECTED OUTCOMES FOR STUDENTS:

Upon completion of the course, the student should be able to:

A. Use a computer with windows and window tools
B. Solve programming problems using pseudocode
C. Develop programs using Visual Basic.NET code and objects
D. Compare and contrast the different types of selective logic
E. Compare and contrast the different types of loops
F. Organize data in arrays and files
G. Design graphical display of data
H. Write programs in modular design
I. Write programs in object-oriented design
J. Create and manage Web projects

IV. CONTENT:

A. Using a computer
    1. Using windows
    2. Disks and folders
    3. Keyboard and mouse
    4. Visual Basic.NET versus Visual Basic
B. Problem solving
    1. Structured logic
    2. HIPO analysis
    3. Pseudocode versus flowcharts
C. Program development
    1. Visual Basic.NET tools
    2. Objects and events
    3. Input and output
    4. Built-in procedures
D. Procedures
    1. Sub procedures
    2. Function procedures
    3. Modular design
E. Selective logic
    1. IF blocks
    2. Relational and logical operators

3. Select case blocks

F. Loops
   1. While loops and Do loops
   2. For/Next loops

G. Arrays
   1. Creating and accessing arrays
   2. Sorting and searching
   3. Multi-dimensional arrays

H. Files
   1. Sequential files
   2. Random-access files
   3. User-defined data types

I. Graphics
   1. Line charts and bar charts
   2. Random color generation
   3. Animation

J. Applications of Visual Basic .NET
   1. Microsoft Word programs
   2. Microsoft Excel programs
   3. Access programs

K. Object-Oriented Programming
   1. Classes
   2. Constructors and destructors
   3. Inheritance

L. Programming with Web forms
   1. Client/Server Web Applications
   2. Lay-out of Wed forms
   3. Managing Web Projects

V. METHODS OF INSTRUCTION:

A. Lecture
B. Discussion
C. Multi-media
D. Projects

VI. TYPICAL ASSIGNMENTS:

A. Read the introduction to Visual Basic.NET chapter and write a paragraph distinguishing between object oriented programming and event driven programming.
B. View the Powerpoint presentation for Chapter 1 online and email a paragraph summarizing the main concepts to the instructor before the next laboratory meeting.
C. Write Visual Basic.NET programs in lab.
   Sample lab projects:
   Write a program to compute home mortgage where the length of the loan requires user input.
D. Discuss special Visual Basic.NET programming techniques in class and how they apply to a variety of office, manufacturing, and scientific applications.

VII. EVALUATION(S):

A. Programming projects
   One project per week
B. Examinations and quizzes
   Two exams: midterm and final
   Weekly quizzes on reading assignments

Sample test questions:

1. Write a FOR loop that will print the numbers from 1 to 10.
2. Send the user a prompt and allow him to input his name.
3. What are built-in functions?
4. How are subprograms used in Visual Basic.NET?

VIII. TYPICAL TEXT(S):

Programming in Visual Basic.NET, First Edition, Bradley & Millspaugh, McGraw-Hill, Irwin, 2003.
Visual Basic Net, How to Program, 2nd edition, by Deitel and Nieto, Prentice Hall, 2002.
An Introduction to Programming Using Visual Basic.Net, 5th ed., by David Schneider, Prentice Hall, 2003.
Visual Basic Net, Complete concepts and Techniques, by Shelly, Cashman, and Quasney, Thomson, Course Technology, 2003.

IX. OTHER SUPPLIES REQUIRED OF STUDENTS: None