COURSE DESCRIPTION

Department and Course Number: CSC 22 **Course Coordinator:** Kevin Harville/ Jinsong Ouyang

Course Title: Visual Programming in BASIC **Total Credits:** 3

Catalog Description: Computer Programming using Visual Basic. Topics include the Visual Basic Integrated Development Environment, visual user interface development, concepts of object-oriented programming, variables, control structures, arrays, functions, subroutines, strings, files, and database access. Applications will be created in areas such as business, games, and multimedia. Prerequisite: Intermediate Algebra. 3 units.

Textbook: Steven Holzner, "SAMS Teach Yourself Microsoft Visual Basic .NET 2003 in 21 Days, 2nd Ed", Sams Publishing, 2003

Course Goals

After completing this course, students will be able to:

- Work in the Visual Studio .NET Integrated Development Environment
- Develop a simple graphical user interface
- Understand the concepts of Object-oriented programming
- Use control structures, such as sequence, selection and iteration
- Use class libraries
- Use functions and subroutines
- Create a distributable Visual Basic .NET application

Prerequisites by Topic

Basic understanding of:

1. Intermediate Algebra
2. The use of personal computers

Major Topics Covered in the Course

1.	Visual Studio .NET development environment	(2 hours)
2.	Graphical user interface development	(2 hours)
3.	Variables	(2 hours)
4.	Arithmetic and logical operators	(3 hours)
5.	Control Structures: If Then, Switch, For Next, Do	(10 hours)
6.	Introduction to file access	(4 hours)
7.	Introduction to database access	(4 hours)
8.	Subroutines	(3 hours)
9.	Functions	(3 hours)
10.	OOP Concepts: Classes, Objects, Methods, and Properties	(12 hours)

Laboratory Projects

1. Develop application utilizing forms
2. Working with controls
3. Creation of an interface using menus and toolbars
4. Procedure calls
5. Using constants, variables, and arrays
6. Manipulation of string, date, and numeric data
7. If / Then and Select Case
8. Simple loop application
9. Working with images and program-generated graphics.
10. Working with files
11. Working with databases

Outcomes

Thorough understanding of:

1. Visual Basic integrated development environment
2. Variables and constants
3. Functions
4. Subroutines
5. Control Structures

Basic understanding of:

1. Database and file access
2. Object-oriented programming—Objects, Methods, and Properties.
3. Graphical user interface development

Exposure to:

1. Use of graphics and multimedia in VB.net programs

Estimated CSAB Category Content

	Core	Advanced
Data Structures		
Algorithms		
Software Design		
Computer Organization and Architecture		
Concepts of Programming Languages		

Oral and Written Communications

Students write a requirements document for a small VB.net application

Social and Ethical Issues

The class discusses research, use of existing code, and plagiarism.

Theoretical Content

The class discusses concepts of object-oriented programming.

Analysis and Design

Projects require students to analyze various programming alternatives to make technical and usability choices.

CSC 22 Course Description by Kevin Harville
September 13, 2006