

General Syllabus for:

Computer Programming I

10-12 GRADES

CONNEAUT SCHOOL DISTRICT

Type of course: Elective Course. The goal of this course is to teach the fundamental concepts of programming so that knowledge can be applied to other programming languages. From the beginning the student is taught to implement programming solutions with proper programming techniques. Programming style is emphasized so that students can make their applications easy to read, modify, and debug. Numerous reviews are presented which provides immediate reinforcement to newly learned concepts. Program exercises are given varying difficulty, making them appropriate for students with a range of abilities. Most exercises include a demonstration run and to help make clear what output is expected from the student's application.

Prerequisites: Algebra

Text Information: Microsoft Visual Basic 2008 by Shelly Hoisington ISBN-13: 978-1-4239-2716-7
Microsoft WSH and VBScript Programming, 3rd Edition by Ford (Cengage/Course) ISBN:

Objectives:

- A thorough understanding of Visual Basic Studio 2005 and 2008 Software Suite
- An introduction to Alice
- An introduction to various programming languages such as Java, C++, etc.

Topics Covered:

VB scripting (2 weeks)

- Writing program in VB scripting (10 days)

Chapter 1: Introduction to Visual Basic 2008 Programming (3 days)

- Introduction & Basic Program Operation: Input/Output Operation, Basic Arithmetic Operations, Logical Operation
- Visual Basic 2008 and Visual Studio 2008
- Programming Languages: Visual Basic, C++, Visual C#
- .NET Framework 3.5: .NET Class Library, ADO.NET 3.5, ASP.NET 3.5, MSIL, CLR
- Types of Visual Basic 2008 Applications
- Summary / Knowledge Check

Chapter 2: Program and Graphical User Interface Design (5 days)

- Introduction
- Using Visual Studio 2008: Open, view, tools, format, options, functional use of program
- Program Development Life Cycle: Analyze program requirements & Design User Interface
- Sample Program
- Guided Program Development
- Summary
- Learn it Online
- Knowledge Check
- Debugging Exercises
- Program Analysis Day
- Case Programming Assignments

Chapter 3: Program Design and Coding (9 days)

- Introduction
- Sample Program
- Fine-Tune the User Interface
- Visual Basic Program Coding
- Phase 3 – Design the Program Processing Objects
- Phase 4 – Code the Program
- Guided Program Development
- Code Listing
- Summary
- Learn It Online
- Knowledge Check
- Debugging Exercises
- Program Analysis
- Case Programming Assignments

Chapter 4: Variable and Arithmetic Operations (9 days)

- Introduction
- User Interface: Textbox & Label Objects, Buttons, and Code Entry
- Intro to Data Entry and Data Types: Data Types and Variables
- Arithmetic Operations
- Program Design: Event Planning Document, Code the Program
- Guided Program Development
- Code Listing
- Summary
- Learn it Online
- Knowledge Check
- Debugging Exercises
- Program Analysis
- Case Programming Assignments

Chapter 5: Mobile Applications Using Decision (10 days)

- Introduction
- Chapter Project
- Pervasive Devices

- Creating A Smart Device Application:
- Making Decisions with Conditional Statements
- Program Designs
- Guided Program Development
- Code Listing
- Summary
- Learn it Online
- Knowledge Check
- Debugging Exercises
- Program Analysis
- Case Programming Assignments

Chapter 6: *Mobile Applications Using Decision (10 days)*

- Introduction
- User Interface Design
- Using Loops to Perform Repetitive Tasks
- Using A Data tip with Breakpoints
- Publishing an Application with Click Once Deployment
- Program Design
- Guided Program Development
- Code Listing
- Summary
- Learn it Online
- Knowledge Check
- Debugging Exercises
- Program Analysis
- Case Programming Assignments

Chapter 7: *Creating Web Applications (10 days)*

- Introduction
- Creating a Web Application
- Designing the Web Page
- Using String Manipulations Properties and Procedures in the String Class
- Guided Program Development
- Code Listing
- Summary
- Learn it Online
- Knowledge Check
- Debugging Exercises
- Program Analysis
- Case Programming Assignments

Chapter 8: *Using Procedures and Exception Handling (10 days)*

- Introduction
- Chapter Project
- Procedures
- Exceptional Handling
- Program Design

- Summary
- Learn it Online
- Knowledge Check
- Debugging Exercises
- Program Analysis
- Case Programming Assignments

Final Project: *Project* (14 days)

- Analyze and Design
- Plan & Develop Program
- Write Code
- Test Code Create Presentations
- Present Final Projects

Assessment:

- Exercise Assignments
- Case Studies
- Creative Thinking Problems
- Concepts and Terms Exams
- Program application Exams

Parent/Student Resources:

Parents: Edline (<http://www.edline.net>) *online tracking of progress and grades

Students: Data files for Application exercises are available on Conneaut School District network.
Each student maintains a personal portfolio of completed work.