

# ALLEGANY COUNTY PUBLIC SCHOOLS HIGH SCHOOL COURSE SYLLABUS 2014-2015

Course Title: Honors Computer Logic (032)

Teacher: Mr. Beal

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Fort Hill web site: [www.forthillhs.com](http://www.forthillhs.com)

Computer Science web site: <http://users.allconet.org/markbeal/FHComputerScience/index.htm>

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**Course Description:** Computer Logic (032M—1 credit); Prerequisite: Introduction to Computers (031)  
(3 college credits at ACM with completion of competencies)

Computer Logic (11-12) is an elective Certificate of Merit course which provides the student with an introductory experience with computer programming. This course will enforce good programming style, logical thinking, and problem solving skills, flowcharting, and software engineering. In addition, a visual programming language will be used to introduce object oriented programming concepts.

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### Text/Materials of Instruction:

- Textbook: An Object-Oriented Approach to Programming Logic & Design. Course Technology. 2006. ISBN: 978-0-619-21563-7.
- Microsoft Visual Basic 2005: Reloaded, 2<sup>nd</sup> edition. Course Technology. 2007. ISBN: 978-1-4188-3623-8.
- Programming Logic and Design, Intro. 4<sup>th</sup> ed. Course Technology. 2006. ISBN: 978-1-4188-3634-4
- Learning To Program with Alice, 2nd Edition. Prentice Hall. 2009. ISBN-13: 978-0-13-208516-8

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### Grading/Evaluation:

#### County Grading Scale– Marking Period

| Percentage | Grade |
|------------|-------|
| 100% – 90% | A     |
| 89% – 80%  | B     |
| 79% – 70%  | C     |
| 69% – 60%  | D     |
| 59% – 50%  | F     |

#### Teacher's Grading Structure – Marking Period

| Assignment Categories | Percentage of Grade |
|-----------------------|---------------------|
| Class Projects/Papers | 45%                 |
| Work Ethic            | 15%                 |
| Class Work            | 20%                 |
| Tests and Quizzes     | 20%                 |

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**Absences/Make-Up Work Procedures:** Students shall be permitted two school days to complete work missed during each absence. These make up days will begin the day after the student returns to school

#### **Additional Expectations:**

## Computer Logic (032) – Course Overview

| 1 <sup>st</sup> QUARTER:   | 2 <sup>nd</sup> QUARTER:   |
|--|--|
| <p><b>I. An Introduction to Visual Basic</b></p> <ul style="list-style-type: none"> <li>A. Brief History of Programming Languages</li> <li>B. OOP Terminology</li> <li>C. Visio and Flowcharting</li> <li>D. Pseudocode</li> <li>E. Visual Studio 2005</li> <li>F. Creating a Visual basic Windows-Based Application</li> <li>G. Creating a Visual Basic Application</li> </ul> <p><b>II. Creating a User Interface</b></p> <ul style="list-style-type: none"> <li>A. Planning an Application</li> <li>B. Skate-Away Sales</li> <li>C. Designing the User Interface</li> <li>D. Assigning Access Keys</li> <li>E. Setting the TabIndex Property</li> <li>F. Designating Default and Cancel Buttons</li> <li>G. Splash Screens and Dialog Boxes</li> <li>H. Timer tool</li> </ul> <p><b>III. Variables, Constants, Methods, and Calculations</b></p> <ul style="list-style-type: none"> <li>A. Variables</li> <li>B. Declaring Variables</li> <li>C. Assigning Data to Variables</li> <li>D. The Scope and Lifetime of a Variable</li> <li>E. Static Variables</li> <li>F. Named Constants</li> <li>G. Option Explicit and Option Strict</li> <li>H. Coding</li> <li>I. Testing and Debugging the Application</li> </ul> <p>Assessments: Performance projects<br/>Benchmark Assessments</p> | <p><b>IV. Making Decisions in a Program</b></p> <ul style="list-style-type: none"> <li>A. The Selection Structure</li> <li>B. Writing Pseudocode for If and If/Else Selections Structures</li> <li>C. Flowcharting If And If/Else Structures</li> <li>D. Coding If and If/Else Structures</li> <li>E. Comparison Operators</li> <li>F. Logical Operators</li> <li>G. Nested Selection Structures</li> <li>H. The Case Selection Structure</li> <li>I. Generating Random Integers</li> </ul> <p><b>V. Repeating Program Instructions</b></p> <ul style="list-style-type: none"> <li>A. The Repetition Structure</li> <li>B. The For...Next Statement</li> <li>C. The Financial.Pmt Method</li> <li>D. Using a List Box in an Interface</li> <li>E. Using a Combo box in and Interface</li> <li>F. The Do..Loop Statement</li> <li>G. Using Counters and Accumulators</li> </ul> <p><b>VI. String Manipulation and More Controls</b></p> <ul style="list-style-type: none"> <li>A. Manipulating Strings in Visual Basic</li> <li>B. Determining the Number of Characters Contained in a String</li> <li>C. Removing Characters from a String</li> <li>D. Inserting Characters from a String</li> <li>E. Search a String for One or More Characters</li> <li>F. Accessing Characters Contained in a String</li> <li>G. Comparing Strings</li> <li>H. Radio Buttons and Check Boxes</li> </ul> <p>Assessments: Performance projects<br/>Benchmark Assessment</p> |
| <p style="text-align: center;"><b>3<sup>rd</sup> QUARTER:</b></p> <p><b>VII. Sub and Function Procedures</b></p> <ul style="list-style-type: none"> <li>A. Procedures</li> <li>B. Sub Procedures</li> <li>C. Parameters in an Independent Sub Procedure</li> <li>D. Passing Variables</li> <li>E. Associating a Procedure with Different Objects and Events</li> <li>F. Function Procedures</li> </ul> <p><b>VIII. Arrays</b></p> <ul style="list-style-type: none"> <li>A. Using Arrays</li> <li>B. One-Dimensional Arrays</li> <li>C. Storing Data in a One-Dimensional Array</li> <li>D. Manipulating One-Dimensional Arrays</li> <li>E. Parallel One-Dimensional Arrays</li> <li>F. Two-Dimensional Arrays</li> </ul> <p><b>IX. Structures and Sequential Access Files</b></p> <ul style="list-style-type: none"> <li>A. Structures</li> <li>B. File Types</li> <li>C. Sequential Access Files</li> <li>D. Writing Information to a Sequential File</li> <li>E. Reading Information from a Sequential File</li> <li>F. The Form Closing Event</li> </ul> <p>Assessments: Performance projects<br/>Benchmark Assessment</p>   | <p style="text-align: center;"><b>4<sup>th</sup> QUARTER:</b></p> <p><b>X. Creating Classes and Objects</b></p> <ul style="list-style-type: none"> <li>A. Classes and Objects</li> <li>B. Defining a Class</li> <li>C. Using a Class That Contains a Public Variable Only</li> <li>D. Using a Class That Contains a Private Variable, a Property Procedure, and Two Methods</li> <li>E. Using a Class That Contains Two Constructors</li> <li>F. Using a Class That Contains Overloaded Methods</li> <li>G. Using a Base Class and a Derived Class</li> </ul> <p><b>XI. Using ADQ.NET 2.0</b></p> <ul style="list-style-type: none"> <li>A. Database Terminology</li> <li>B. Connecting a Database to an Application</li> <li>C. Binding the Objects in a Dataset</li> <li>D. Accessing the Records in a Dataset</li> <li>E. Dataset Designer</li> </ul> <p>Assessments: Performance projects<br/>Benchmark Assessment</p>   |