HONORS AND AP HONORS COMPUTER TECHNOLOGY

DESCRIBE the GROWTH of COMPUTER TECHNOLOGY
Explore basic hardware components of a computer
Discuss types of software and the pros and cons of a company
            developing their own software solution or buying prepackaged software
Discuss people and events in the history of computer hardware and software
Define the program compilation process and project design methodology
Describe how technology is integrated with business

UTILIZE COMPUTER TERMINOLOGY
Create a Glossary of terms
Use the vocabulary correctly

USE MICRO COMPUTERS
Identify parts
Power up/down
Load/save files
Troubleshoot basic problems
Use the printer
Use a scanner
Use a digital camera

APPLY CONCEPTS AND LOGIC OF PROGRAMMING
Prepare flowcharts
Prepare and use documentation
Prepare test data
Use proper system commands
Use the concepts of global naming conventions
Understand the importance of global naming conventions
            when applied to a team project
Exhibit proper technique to debug and correct errors
Modify existing programs to meet new needs

PROGRAM USING QBASIC:
Successfully write, enter, compile, debug & document
1-9 programs
10-15 programs
16-20 programs
more than 20 programs
Use the following commands on the PC's
 + - * / ( ) ^
AND/OR/NOT
CLS
DIM
DO/WHILE
END/ENDIF
EOF
FOR/NEXT
CALL / END SUB / SUB
GOTO
IF/THEN/ELSE
INPUT
LET
LPRINT
PRINT USING

PRINT
READ/DATA
REM
RUN
String Variables
Subscripts
TAB

PROGRAM USING Visual C++
Explore the Visual Studio IDE
Create and use TextBox and Button controls
Read and interpret error messages

Develop algorithms to solve a problem
Declare and initialize standard C++ data type variables
Read data using the TryParse() method
Use the standard C++ arithmetic operators
Use compound assignment operators
Use the Math::Pow() and Math::Sqrt() methods
Display output using the ToString() method

Explain binary representation of integers
Discover similarities between integer and character data
Demonstrate methods for converting data from one type to another
Use integer division and the mod operator (%)

Describe the difference between sequential and selection control structures
Compare values using relational operators
Use if and if...else statements
Use logical operators AND, OR, NOT
Create nested control structures
Use the switch statement

Use for loops, while loops, and do...while loops
Generate random numbers
Create loops for summation, counting, and constructing an extended string of characters

Use system-defined class methods
Create programmer-defined methods
Pass data into a method by value and reference
Use methods with return types
Explore the use of `System::Drawing` objects and their methods
Use the PictureBox and Timer controls

Declare and use one-dimensional arrays
Pass array elements and entire arrays into methods
Perform a sequential search of an array
Use nested loops with two-dimensional arrays

Use the binary search algorithm
Compare the binary search to other common forms of searching
Analyze the complexity (big-O) of the binary search
Create and use arrays of strings
Compare strings
Explore uses for the ListView control
Create and use a `Swap()` method to exchange data values in arrays

Use nested loops to sort elements in an array
Differentiate between a selection sort algorithm, the bubble sort and the insertion sort

Discover how to recognize a recursive problem
Code a recursive method
Use recursion to draw fractal images
Create and code menus

Declare, create, and assign pointers
Use pointers to indirectly access data in other memory cells
Experiment with dynamic array allocation
Use pointer arithmetic to traverse an array
Use pointer arrays
Produce sorted lists without moving the data around
Create class definitions
Define a default constructor and a destructor
Instantiate objects
Add nodes to the front of a linked list
Delete nodes from the front of a linked list
Recursively traverse a list

Design class definitions
Implement data hiding and encapsulation
Use accessor and mutator methods
Implement an initializing constructor
Use `public` and `private` access modes
Create and reference a two-dimensional array

IDENTIFY CAREER CHOICES
Name occupational titles
Express career goals
Identify salary levels and appropriate education
Write a job resume and cover letter
Discuss appropriate dress for interviews
Discuss different company dress code policies
Complete Portfolio
Complete Mock Job Interview

DEMONSTRATE FUNDAMENTAL WORD PROCESSING SKILLS
utilize function and cursor movement keys
name, save, retrieve, print documents
enhance text using bold, underline, center, italics
format documents: set margins, tabs, spacing, and alignment
cut, copy and paste text
search and replace text
apply headers, footers, page numbers
use spell check and the thesaurus

PROGRAM USING VISUAL BASIC
Design a form
Attach controls to the form
Modify a control's properties
Set up forms to handle a variety of data types and variables
Write the code for events such as: calculations, clear, end & hide or show
Use the ASC, CHR, Format, and Random number functions
Understand data type conversions

Use IF-THEN-ELSE and SELECT CASE
Use logical operators
Use the Inputbox and MsgBox functions
Use the Inputbox and MsgBox functions
Create loops using FOR-NEXT, WHILE, DO, and nested loops
Design custom menus
Code menu options
Code a sub procedure and a function procedure
Create a dynamic web site
Use List Box and Combo Box controls
Create static and global arrays
Perform a table lookup
Pass an array and sort an array
Create a control array
Use an index to access array data
Read and Write text files
Use multiple forms and access variables on other forms
Create a project that interacts with a data base
Create smart device applications and web applications
Edit input data and use the TabIndex property
Work with classes: creating, instantiating, constructors, passing arguments
Create a smartphone application incorporating web services

PROGRAM USING VISUAL BASIC for APPLICATIONS
Use the following to create VB Macros in Word, Excel, and Access:
Select the appropriate data type and name for an object variable
Create and assign string variables
Concatenate strings
Use string functions - val, ucase, lcase, left, right, mid
Create, assign, and format date variables
Create and assign numeric variables
Use numeric literals and expressions correctly
Code selection structures - if-then-else, select case
Code repetition structures - for-next (each, with), do-loop
Create code that uses message and dialog boxes and the office assistant
Create option buttons, check boxes and list boxes

PROGRAM USING HTML
Create an HTML file using TAGS, headings, and text parapgraphs
Modify the page: change colors, center and add a horizontal rule
View the page in your browser and print the page and its code
Include links within the page, to another page within the same site
Include links to another web site and to E-mail
Insert images, modify attributes, create a link using the image
Enhance text with bold, italics, color; change default bullet style
Set the link target and add links to the targets
Plan, design and code a table
Insert images and links in a table
Modify the table's borders, spacing, and column width
Span rows and columns
Create an image map, locate X-Y coordinates, use tag attributes
Plan and layout a web page with frames
Create a frame definition file
Create header, navigation & home pages for frame definition file
Create a form having text, radio button, and text area controls
Create submit and reset buttons on a form

Modify a page with a form to include selection menus
Apply styles to font and text attributes, backgrounds, lists, and block level boxes
Code programs using embedded styles
Code programs using external styles

USING FLASH to CREATE and ENHANCE WEB PAGES
Create and edit graphics
Use symbols, libraries and instances
Create layers, scenes and buttons
Add sound and video to the timeline
Use animation techniques, actions and buttons
Publish the flash movie creating an interactive web page

PROGRAM USING JAVA
Identify objects, data types and class libraries
Utilize control statements such as if, switch, while and for
Create and call methods passing parameters and returning values
Define classes and create objects
Declare, initialize, copy and search arrays
Code using linear and nonlinear data structures
Code using frames, panels and a variety of layout managers
Create user interfaces using the following:
           buttons, labels & text boxes
           list, combo & check boxes
           radio buttons, menus, scroll bars & panes
Code applets linking them to java code
Write code to handle mouse and keyboard events
Define, throw and handle exceptions to error handling routines
Explore coding for international audiences

PERSONAL QUALITIES
Work Effort
Safety Habits
Work Area Organization
On Task Behavior
Responsibility
Initiative
Team Work
Respect
Interpersonal Skills