

# MET-1120: COMPUTER APPLICATIONS AND PROGRAMMING

## Cuyahoga Community College

**Viewing: MET-1120 : Computer Applications and Programming**

**Board of Trustees:**

2016-01-28

**Academic Term:**

Fall 2019

**Subject Code**

MET - Mech Eng/Manuf Ind Eng Tech

**Course Number:**

1120

**Title:**

Computer Applications and Programming

**Catalog Description:**

Design and debug windows-based application software in Microsoft Visual Basic and C Programming languages. Apply designed software and spreadsheets in technological problem solving. Applying programming concepts to customize spreadsheets and chosen engineering specific application software.

**Credit Hour(s):**

2

**Lecture Hour(s):**

1

**Lab Hour(s):**

3

### Requisites

**Prerequisite and Corequisite**

MATH-0955 Beginning Algebra, or appropriate Math placement score to place into MATH-0965 Intermediate Algebra.

### Outcomes

**Course Outcome(s):**

Write, debug and compile Visual Basic and C Programming codes into executable software.

**Essential Learning Outcome Mapping:**

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

**Objective(s):**

1. Describe the Microsoft Visual Basic and its environment.
2. State the procedure to be followed in designing application software using Microsoft Visual Basic and C Programming Languages.
3. Use Microsoft Visual basic and C Programming Languages to design and debug windows-based application software.
4. Demonstrate how to compile visual basic and C Programming Code.

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**Course Outcome(s):**

Apply programming applications in designing software within other Microsoft programs.

**Essential Learning Outcome Mapping:**

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

**Objective(s):**

1. Explain the functions of the microcomputer and its component parts.

2. Explain the role of software in the application of microcomputer to technological problem solving.
3. Load, run, save work, and exit from application software in Windows environment.
4. Use visual basic, C Programming languages, and spreadsheet functions to perform technological problem solving.

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**Methods of Evaluation:**

1. Programs writing
2. Hands-on exercises
3. Quizzes
4. Midterm examination
5. Final examination

**Course Content Outline:**

1. CONCEPTS
  - a. Users defined types and file controls
  - b. Introduction to computers,
  - c. Windows operating system hardware
  - d. Windows operatign system software
  - e. Visual Basic language
  - f. C Programming language
  - g. Visual Basic language
  - h. Visual Basic Orientation
  - i. Visual Basic Structures
  - j. Data Types
  - k. Variables, Expressions and statements
  - l. Simple sequence structure
  - m. Decision-making structure
  - n. Loop structure
  - o. Use of strings and operators
  - p. Formatting
  - q. Display functions
  - r. Menus & File handling
  - s. Sorting
  - t. Multiple document interface
  - u. Dialog box control
  - v. Spreadsheet Terms
  - w. Spreadsheet Formulas
  - x. Spreadsheet functions
  - y. Spreadsheet charts.
2. SKILLS
  - a. Create proper programs using Visual Basic and C programming languages
  - b. Apply programs to technical problems
  - c. Understand the use of spreadsheets
  - d. Using Visual Basic Applications
  - e. Work with fellow students to problem solve
3. ISSUES
  - a. Get acquainted with software used in the engineering field
  - b. Appreciate how the software is applied to problems in the engineering field
  - c. Understand their relationship with Windows environment

**Resources**

Gaddis Irvine. *Starting Out With Visual Basic 2010*. 5th ED. Upper Saddle River, NJ: Prentice Hall, 2001.

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Horton, Ivor. *Ivor Horton's Beginning Visual C++ 2010*. 1st ed. Wiley, 2010.

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Halvorson. *Microsoft Visual Basic 2010 Step by Step*. Microsoft Press, 2010.

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Gaskin Vargas. *Go! with Microsoft Excel 2007, Brief*. 1st ED. Upper Saddle River, NJ: Prentice Hall, 2011.

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Grauer Scheeren. *Exploring Microsoft Office Excel 2007*. 1st ED. Upper Saddle River, NJ: Prentice Hall, 2011.

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Deitel. *C How to Program*. 7th ed. Upper Saddle River, NJ: Prentice Hall, 2013.

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#### **Resources Other**

Software:

Microsoft Word, Excel, Visual Basic.net, C Programming

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