# COURSE OUTLINE

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>IST 109</td>
<td>Introduction to Programming</td>
<td>3</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Hours:</th>
<th>Co- or Pre-requisite Passed</th>
<th>Implementation</th>
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<tbody>
<tr>
<td>Lecture/Lab/Other</td>
<td>MAT033 with a C or better</td>
<td>sem/year</td>
</tr>
<tr>
<td>lecture 3/2</td>
<td>Or an appropriate score on</td>
<td>Spring 2019</td>
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**Accuplacer test**

**Catalog description (2016-2017 Catalog):**
Overview of Visual Basic.NET language to create event-driven programming applications to be run in a Windows environment. Develops object-oriented solutions for a variety of problems in personal and business computing.

**Is course New, Revised, or Modified? Revised Spring 2019**

**Required texts/other materials:**
  - Authors: David I. Schneider
  - Publisher: Pearson Addison Wesley.

Optional: 1 Flash Drive/USB Drive

**Revision date:**
Fall 2017

**Course coordinator:**
Queen E. Okike-Iroka, Ed. D., 609-570-3464
email okikeq@mccc.edu
Information resources:

The library has an extensive collection of books that students may use for extra reinforcement of the skills being taught in this course.

Other learning resources:

Course Competencies/Goals: As this is an introduction level programming course, the course should prepare the students for future college level work in programming. The students should develop confidence in their abilities to perform successfully. They should also gain experiences that connect their classroom learning with real world applications of programming and should be able to build techniques of reasoning for effective problem solving.

The student will be able to:

• Demonstrate knowledge of programming tools
• Apply variables, input, and generate output
• Write programs decision structure
• Apply procedures and functions in programs
• Generate loops to accomplish repetitive statements
• Apply arrays to store and manipulate data elements Edit and design databases

Course-specific General Education Knowledge Goals and Core Skills.

General Education Knowledge Goals

Goal 2. Technology. Students will use appropriate programming concepts and operations to interpret data and to solve problems.

MCCC Core Skills

Goal B. Critical Thinking and Problem-solving. Students will use critical thinking and problem solving skills in analyzing information.

Goal F. Collaboration and Cooperation. Students will develop the interpersonal skills required for effective performance in group situations

Units of study in detail.

Unit I [An Introduction to Computers and Problem Solving]

Learning Objectives

The student will be able to...

• List the components of computer system and explain how they work together to produce information
• Explain the program development cycle
• Apply programming tools which includes: Hierarchy chart /Top-down chart/HIPO(Hierarchy
plus Input-Process-Output)/VTOC (Visual Table of Contents; pseudo code; flowcharts; and object properties and settings
Unit II: Visual Basic Controls and Events] Learning Objectives: The student will be able to:

- Invoke and Exit VB.NET and manage programs
- Understand VB.NET environment, controls, data type and variables; how they are used
- Write sub procedures, functions and modular design

Unit III: [Variables, Input, and Output] Learning Objectives: The student will be able to:

- Write numeric expressions to solve business problems
- Demonstrate correct use of Strings in programming expressions
- Manipulate data input and produce correct output

Unit IV: [Decisions] Learning Objectives: The student will be able to:

- Explain the use of Relational and Logical Operators
- Understand Decision Structure
- Apply If Blocks and Select Case Blocks
- Input data via User Selection

Unit V: [General Procedures and Repetition] Learning Objectives: The student will be able to:

- Break programs into functions and sub procedures
- Understand Repetition Structure (Do Loops and For...Next Loops)
- Process lists of data with Do Loops using Peek Method, Counters and Accumulators; Flags

Unit VI: [Arrays, Data Files and Databases] Learning Objectives: The student will be able to:

- Create and Access Arrays
- Use Arrays
- Create a Sequential File
- Add and retrieve Items from a Sequential file
- Edit and design database

Evaluation of student learning

Tests, laboratory assignments are online, with the questions selected to reflect the
above student learning outcomes for each unit. The midterm and final comprise of programming projects. Instructors may also choose to incorporate a project in the course which would also be a part of the in-class portion.

8/12/2013
FINAL GRADE

The final grade is a composite based upon:

Successful completion of Projects demonstrating the use of programming tools to break down problems into manageable tasks with complete documentation; while using programming structures (units i-vi) 50%

Tests/Quizzes 20% Midterm Examination on Unit i and unit ii 15% Final Examination on Unit iii 15% Total 100%

Academic Integrity Statement:

Mercer County Community College is committed to academic integrity - the honest, fair and continuing pursuit of knowledge, free from fraud or deception.

• Students should never:

✓ Knowingly represent the work of others as their own ✓ Knowingly represent previously completed academic work as current ✓ Fabricate data to support academic work ✓ Use or obtain unauthorized assistance in the execution of any academic work ✓ Give fraudulent assistance to other students ✓ Unethically use technological means to gain academic advantages

Violators of the above actions will be penalized. For a single violation the faculty member will determine the course of action. This may include, assigning a lower grade on the assignment, lowering the course grade, failing the student, or another penalty that is appropriate to the violation. The student will be reported to the Academic Integrity Committee, who may impose other penalties for a second (or later) violation. The student has right to a hearing and also to appeal any decisions. These rights are outlined in the student handbook.

8/12/2013