CSC 141 Articulation Competencies

*Programming Fundamentals (5 Credits)*

**Introduces programming fundamentals using a procedural, object-oriented language. Topics include expressions, simple I/O, data storage, variable usage, decision and repetition control structures, functions and parameter passing, design principles, and problem-solving strategies.**

*Upon completion of this course, successful students will score 80% or better on the following competencies to receive WVC college credits.*

Student Learning Outcomes:

**CATEGORIES**

1. **Problem Solving**: A. Critical Thinking 3. **Social Interaction**: A.Collaboration

 B. Creative Thinking B. Ethical Conduct

 C. Quantitative Reasoning C.Professional Conduct

 D. Qualitative Reasoning D. Cultural Diversity

1. **Communication**: A. Oral Expression 4. **Inquiry: A.** Information Literacy

 B. Written Expression B. Research

 C. Artistic Expression C. Documentation

Course Competencies Checklist:

* Choose correct type and size of variables to hold data. (1A)
* Apply the basic operators to manipulate data. (1A)
* Write a sequence of computer statements which perform a task. (1A)
* Construct conditional statements for alternate decision paths within a program. (1A)
* Construct simple repetition statements for iterative processes. (1A)
* Construct simple functions to reduce complexity and redundancy in a program. (1A)
* Use the basic classes within the computer language’s standard library. (1A)

Program Outcomes:

Students taking computer science classes will:

* Learn the fundamentals of a structured programming language and be able to apply those skills towards creating computer programs and/or websites

Course Topics:

* Data types
* Expressions, operators and operator precedence
* Simple console I/O
* Variables
* Strings
* Sequential statements
* Logic
* Decision statements (IF statements and switch-case statements)
* Iterative statements (FOR, WHILE, DO…WHILE)
* Debugger usage
* Simple file I/O
* Functions and parameter passing
* Arrays
* Basic program design principles