

**C++ PROGRAMMING**  
**College Credit and Careers Network**  
**Dual Credit Articulation Agreement**

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**Upon completion of high school courses equivalent to the following competencies:**

- Understand and use common programming terms.
- Understand and use general programming techniques.
- Plan and design a C++ application.
- Save and retrieve a C++ project and its associated files.
- Write valid sequential statements and expressions.
- Make use of the language's data types, arrays, pointers, and structures.
- Write efficient functions.
- Use decision structures such as if, if/else, or switch statements to make programming decisions.
- Use repetition structures such as for, while, or do-while statements.
- Use formatted input/output statements.
- Test and debug a C++ application.
- Classify the different steps and the files created when making a new executable files
- Identify and use the different data types in this programming language to manipulate data.
- Use mathematical operators, comparison operators, and logical operators to solve business problems.
- Recall the correct level of precedence for each of those operators.
- Plan and design a program using structured developmental techniques such as algorithms or pseudo code.
- Use if and if/else selection structures to decide which algorithms to perform in a program
- Use repetition structures (while, do-while) to repeat a group of statements.
- Use the switch statement when making multiple decision selections.
- Explain why functions are a necessary component of modularizing C programs.
- Plan, design, create and use functions in breaking down tasks to solve a problem.
- Compare passing values by reference or by value between functions
- Write valid programming statements to declare an array, initialize an array, refer to individual elements of an array, and pass arrays to functions.
- Write valid programming statements to declare a pointer, initialize a pointer, and pass pointers as arguments to functions.
- Use and explain the relation between pointer variables and the values they point to.
- Use and manipulate an array of characters, e.g. string manipulations.
- Define the general scope of work to meet project requirements or solve the problem.
- Use the debugging tools available with the compiler to correct logic errors.
- Understand the syntax of C++
- Understand C++ data types and use them in C++ programs.
- Understand the initialization, input, assignment, and output operations
- Structured types (arrays, struct and classes) in C++
- Read, understand, and implement class definitions
- Write simple programs to demonstrate mastery of C++ programming fundamentals.

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**A student earning a “B” or better may earn college credit at the following college:**

<u>College</u>	<u>Course</u>	<u>Credits</u>
Bellevue College	PROG 111	5
Lake Washington Technical College	ITAD 123	5