

Course Specification Document

Title	Programming 1
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Credits	3.5 ECTS
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Aims	This course aims to introduce the student to programming concepts and programming thinking methodologies, and to provide students with the fundamental principles of writing and implementing computer programs.
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Intended learning outcomes
<p>On successful completion of this course, the student will be able to:</p> <ul style="list-style-type: none">• Recognize the main methods of expressing algorithms through flowcharts and pseudo-code.• Understand the program structure in a programming language (such as C++) including the basic control structures (instructions) and their counterparts, as well as the role of compilers and interpreters.• Recognize file types and master working with sequential text files.• Master the work on basic patterns in programming languages, performing operations on them, and understanding the structure of one-dimensional arrays, the structure of character strings.

Syllabus
<ul style="list-style-type: none">• Introduction to algorithms and programming concepts.• Writing algorithms using flowcharts.• Writing algorithms using pseudo-code.• Transition from algorithms to writing programs in the C++ language.• Types, priorities, logical operations, and built-in functions.• Subordinate (derived) instructions for basic instructions.• Structure of one-dimensional and multi-dimensional arrays.• Character and string data types.• Files, their types, and handling sequential text files (opening, reading, writing, ...).