Course Syllabus

In this course you will learn:

**Module 1: Introduction to JavaScript and Computer Programming**

* About JavaScript (how to communicate with the computer, what is JS, advantages and limitations of JS, where is JS used today)
* Setting up the programming environment (development tools, online development environment, local development environment)
* First JS program – Hello, World! (a few words about HTML, how to run your JavaScript code, executing the code directly in the console)

**Module 2: Variables, Data Types, Type Casting, and Comments**

* Variables (naming, declaring and initializing variables, declarations and strict mode, changing variable values, constants, scope)
* Primitive data types (Boolean, Number, BigInt, String, undefined, null, type casting – primitive construction functions and primitive conversions, implicit conversions)
* Complex data types (Object, Array, basic Array properties and methods)
* Comments (single-line comments, multi-line comments, documentation)

**Module 3: Operators and User Interaction**

* Assignment, arithmetic, and logical operators (what are operators, assignment operators, arithmetic operators, logical operators, compound assignment operators)
* Strings, comparison, and other JS operators (string concatenation and compound assignments, comparison operators, conditional operators, typeof, instanceof and delete operators, operator precedence)
* Interacting with the user (dialog boxes – alert, confirm, prompt)

**Module 4: Control Flow – Conditional Execution and Loops**

* Conditional execution (what is conditional execution, the if–else statement, the conditional operator, the switch–case statement)
* Loops (what are loops, the while loop, the do–while loop, the for loop, the for–of loop, the for–in loop, the break and continue statements)

**Module 5: Functions**

* Function basics (what are functions, declaring functions, calling functions, local variables, the return statement, function parameters, shadowing)
* Functions as first-class members (function expressions, passing a function as a parameter, callbacks)
* Arrow functions (declaring and calling)
* Recursion (basic idea)

**Module 6: Errors, exceptions, debugging, and troubleshooting**

* Errors and exceptions – introduction (natural languages and communication errors, errors vs. exceptions, errors without exceptions, limited confidence)
* Basic types of errors in JS (SyntaxError, ReferenceError, TypeError, RangeError)
* Exception handling (the try–catch statement, the finally statement, the throw statement, and custom errors)
* Code debugging and troubleshooting (what is debugging, step-by-step execution, viewing and modifying variables, the step out option, measuring code execution time)